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PREVIEW OF PROBABILITIES IN TRANSPORTATION • HANDLING • PACKING AND PACKAGING • WAREHOUSING
FINANCE AND INSURANCE • MARKETING • SERVICE AND MAINTENANCE



S-T-R-E-T-C-H-I-N-G A BOXCAR

IN THE EARLY STAGES OF THE WAR, a serious shortage of shipping space threatened supply lines to Europe and the Pacific. Aiding in the urgent search for a solution to the problem, The Cambridge Tile Manufacturing Company, Cincinnati, successfully completed an experiment in compressing three carloads of dried whole egg powder and loading them into a single boxcar.

Presses that had been used to compress clay into Suntile were quickly converted into food compression equipment through the use of new dies designed and built in Cambridge Tile's own shops. Facilities were rapidly expanded to meet the ever increasing demand of the Armed Service Forces for compressed emergency rations. But the conversion created handling problems that throttled production and prevented full utilization of

the extra shipping space made available by the new food compression method.

So Towmotor engineers were called in to install a modern materials handling system. 100-pound bags of dried food powders were loaded on pallets in the receiving room and fed to the production line in a continuous, controlled stream. The finished cakes of compressed food were packed into shipping cartons, assembled into large unit loads, and moved directly into the boxcars by one girl and a Towmotor. Work schedules were accurately timed to provide maximum output per man and machine. Closer inventory control eliminated delays and tie-ups. Production speed was increased to machine capacity, freed from the limitations imposed by slow handling methods. Most important, Towmotor made possible immediate and full utili-

zation of every foot of shipping space.

The results achieved at Cambridge Tile are typical of Towmotor installations throughout industry. The know-how and experience that contributed numerous opportunities to increase productive output also enabled Cambridge Tile to effect savings of \$1,000 a month in handling costs alone. The Towmotor Materials Handling Analysis Guide, a product of know-how and experience, will greatly simplify your handling problem; send for a copy today. Towmotor Corporation, 1235 East 152nd Street, Cleveland 10, Ohio.

TAKE IT UP WITH
TOWMOTOR
THE ONE-MAN-GANG

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Volume 45

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Published by the

CHILTON COMPANY, INC.



1946
R 658.68 v. 45
100 East 42 Street

New York 17, N. Y.

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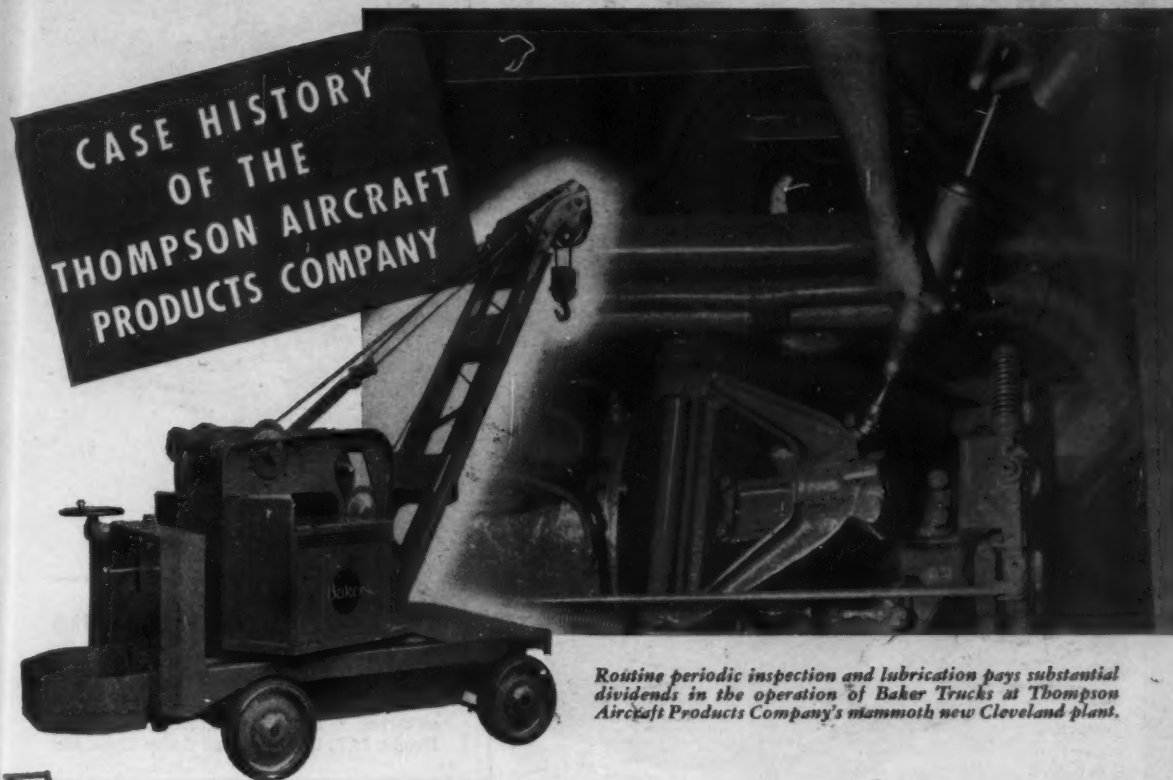
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A Chilton ① Publication

Published Monthly by

DISTRIBUTION and WAREHOUSING

PUBLICATIONS, Inc.

100 East 42nd Street

New York 17, N. Y.

Telephone MUrray Hill 5-8600

OFFICERS AND DIRECTORS

C. A. Musselman, President; H. S. Webster, Jr., Vice President and General Manager; Wm. A. Barber, Secretary; E. P. Beebe, Treasurer; J. S. Hildreth, Charles Downes, A. H. Ringwalt.

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Established 1901

Subscription Rates

U. S., \$5.00 per year; Canada, \$5.50 per year; Foreign Countries, \$6.00 per year. Single Copies, 50c. each.

Acceptance under the Act of June 5, 1934 at New York, N. Y., authorized Feb. 8, 1939

JANUARY, 1946

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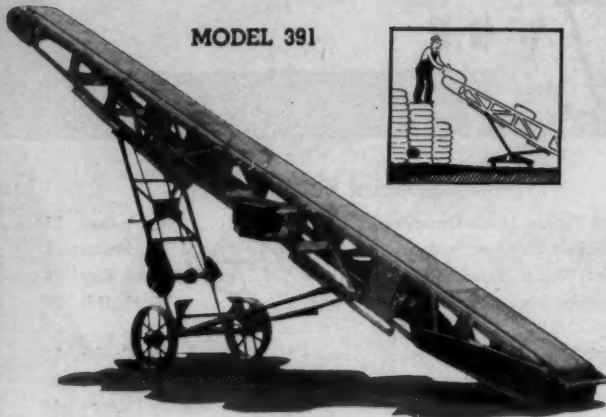
EVERY business is engaged in and affected by distribution. All firms, industrial and mercantile, are shippers as well as receivers; all use transportation; all are confronted with handling and packing problems; all are concerned to some extent with the proper storage of raw materials or finished products; all have to deal with vexing financial and marketing questions; all need insurance; all have to consider service and maintenance of one kind or another. These are all phases of distribution, which begins before production with the movement of raw materials, and continues after production until a finished product reaches its ultimate destination, the final user or consumer.

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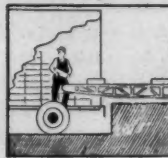
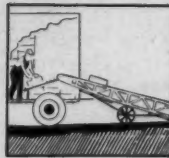
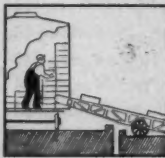


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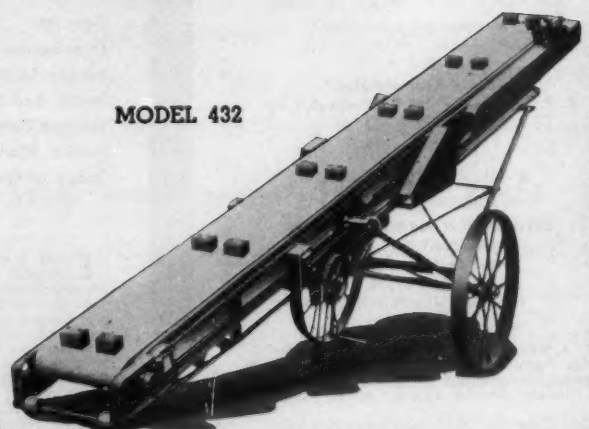
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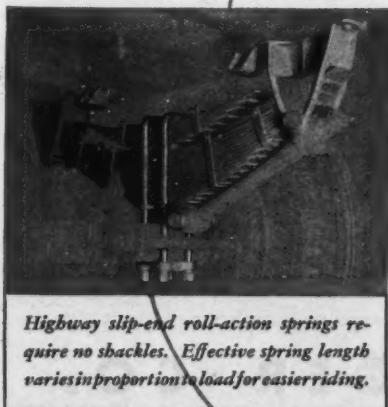


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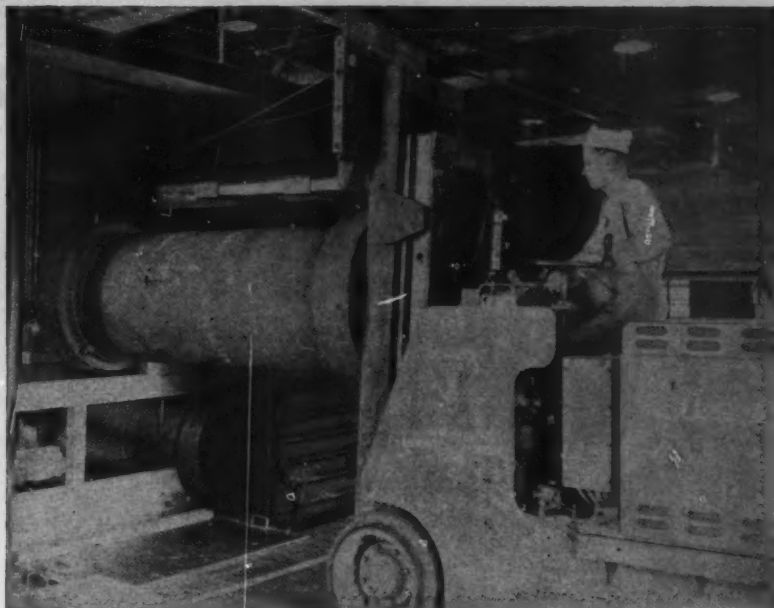
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DETROIT, MICHIGAN, U. S. A.

DISTRICT OFFICES: BIRMINGHAM, ALA. • BOSTON, MASS. • CHICAGO, ILL. • NEW YORK, N. Y. • PITTSBURGH, PA.
PHILADELPHIA, PA. • SEATTLE, WASH. • WASHINGTON, D. C. • TORONTO, CANADA



**YEARS NOW ADDED
TO TRAILER "LIFE"
by ELECTRONIC
Stress-Measurement**

**New "Frame" Development Eliminates
Damaging Stress-concentrations—
DISTRIBUTES STRAIN THROUGHOUT
THE ENTIRE TRAILER STRUCTURE!**

Trailers with a light-weight under-construction are now fully as strong as those of the old "full frame" design. They are the new-type Trailmobiles, with a unique frame-and-bolster arrangement, developed by ELECTRONIC Stress-measurement.

We have strengthened every bolster, as indicated by our exclusive technique of ELECTRONIC stress-determination. And, also by ELECTRONICS, placed every one correctly. Then every bolster is welded to big posts in the sides. And the entire Trailmobile becomes ONE INTEGRAL, LOAD-CARRYING UNIT!

Then no single bolster, or few bolsters, ever "take it" alone. Instead, "distributing beams" disperse—distribute—spread

all load-stress concentrations throughout many bolsters—throughout the entire trailer!

So, every element in a Trailmobile contributes its own full support to the load!—permitting unusual lightness of weight, yet with enduring strength beyond that of trailers with even tremendous old-style frames. Hundreds of operators have already

found this to be true. It is one of the many features that make the Trailmobile a trailer you're glad to own.

"Check in" at your near-by Trailmobile Branch—and do it soon! You will be surprised, and pleased, and very welcome.

•
THE TRAILMOBILE COMPANY
Cincinnati 9, Ohio



Protecting its 104 Year Reputation
— 71 "Homefolks" Service Centers

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1945, THE
TRAILMOBILE
COMPANY

Salute to AMERICAN INDUSTRY

During 1944-45, Union Pacific paid tribute to American industry on its radio program "Your America", broadcast each week over a nation-wide network. Representatives of 70 major industries were given the opportunity to present the dramatic story of their respective industry's contribution to the welfare of the nation.

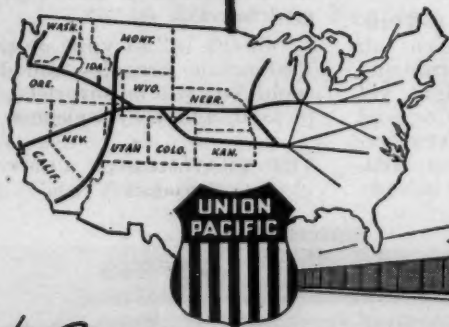
For example, on one program our guest speaker, J. W. Howell of San Francisco, represented the American Warehousemen's Association. On another program, John B. Keeler of Pittsburgh, represented the National Industrial Traffic League.

Union Pacific—along with other railroads—was then engaged in moving vital wartime materials. Your industry and the nation generally knows what a tremendous task that was and how efficiently it was accomplished.

Today, Union Pacific is prepared to continue its assistance to your industry by speeding the distribution of peacetime commodities. Equipment, facilities and personnel are geared to provide unexcelled service.

A staff of trained traffic men stand ready at all times to cooperate with you.

For fast, dependable service . . .



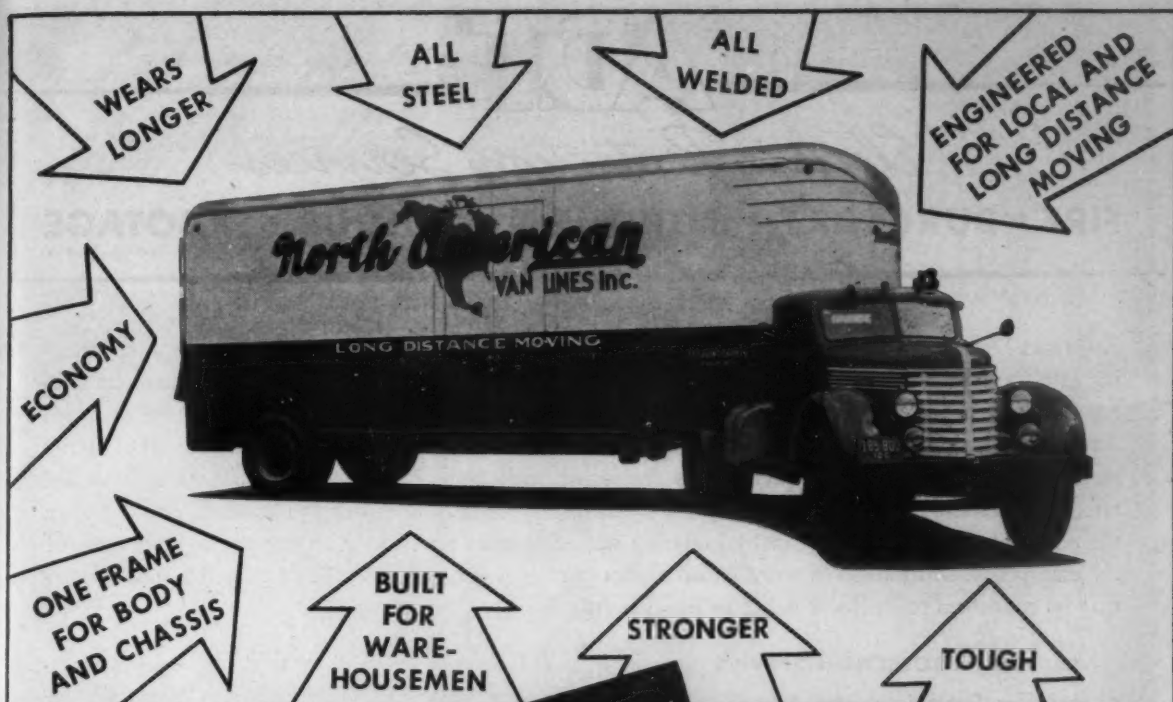
*Be Specific—
say "Union Pacific"*

★ Union Pacific will, upon request, furnish information about available industrial and mercantile sites in the territory it serves. Address Union Pacific Railroad, Omaha, Nebraska.

The Progressive

UNION PACIFIC RAILROAD

The Strategic Middle Route



ALL THIS... and Lighter Weight, too!

Long-lived sturdiness is the predominating feature about HERMAN vans and van trailers. They're solidly built throughout. Nothing "tinny" about them anyplace.

But, thanks to the Herman method of construction—*One frame for body and chassis* (which means heavy construction in the RIGHT places) a HERMAN combines greater strength with lighter weight plus maximum payload space per cubic foot.

In a HERMAN the 18-gauge side panels and 14-gauge roof rails are an integral part of the frame . . . welded into one wear-defying unit that long outlasts weaker construction.

BUILT FOR WAREHOUSEMEN

HERMAN all-steel welded vans and van trailers are built exclusively for warehouse traffic by an organization that knows what warehousemen want—and knows how to give it to them at real economy—in purchase price and in lower maintenance costs. Write us your requirements.

HERMAN BODY CO.

4400 CLAYTON BLVD.

ST. LOUIS 10, MO.



Electric Protection Services

FIRE • BURGLARY • INTRUSION • HOLDUP • SABOTAGE

American District Telegraph Company (A.D.T. System) is the only nation-wide organization specializing in electric protection services. A.D.T. manufactures and installs electrical protection systems to safeguard lives and property against the hazards of fire and unlawful intrusion. Systems also are provided for the supervision of watchmen and guards and of certain industrial processes. The protection equipment within each customer's premises is connected with an A.D.T. Central Station where skilled attendants stand constant vigil and respond to alarms by dispatching armed and bonded private guards, the police, the fire department, or by initiating whatever other action may be required by the nature of the emergency. In localities where Central Station service is not available, the protection system usually may be connected to the local police or fire department.

FIRE PROTECTION SERVICE

- **Sprinkler Supervisory and Waterflow Alarm:** Automatically detects and reports trouble conditions (whether caused maliciously or otherwise) that might impair the sprinkler's effectiveness. Automatically summons the fire department the instant a sprinkler head opens or in case of a serious leak.
- **Aero Automatic Fire Alarm:** (For unsprinklered areas, or in conjunction with sprinklers.) Automatically detects fire when it starts, and automatically summons the fire department.
- **Manual Fire Alarm:** Available in various types—for summoning the fire department, for sounding local alarms to warn occupants, or performing both functions.
- **Automatic Fire Control for Air Duct Systems:** Provides automatic fire and smoke detecting and reporting devices for air conditioning, ventilating and other air duct systems. Automatically closes dampers, stops fans, etc., and summons the fire department.

INTRUSION DETECTION SYSTEMS

- **Burglar Alarm:** Protection for doors, windows, skylights, etc., by means of electrified screens, foils and similar devices.
- **Holdup Alarm:** Provides means for transmitting a silent signal to summon police in case of holdup or other emergency.
- **Invisible Ray Alarm (Photoelectric):** Projects beams of invisible light across indoor or outdoor areas. Interruption of beam by any person or vehicle results in an alarm.

● **Telapproach:** Establishes an electronic field and produces alarm upon approach of any person into the electrical field.

● **Phonetalarm:** A sound detection system especially adaptable for protection of vaults containing valuables such as specie, securities, confidential plans and documents, narcotics, gauges, tools, etc.

● **Emergency Police Call:** Provides means for summoning police direct to premises in case of emergency.

PATROL SUPERVISION FOR WATCHMEN AND GUARDS

● **Central Station Watchman's Reporting Service:** Provides signaling stations electrically connected to the A.D.T. Central Station to which the watchman reports at prearranged intervals. Failure to signal is immediately investigated.

OTHER A.D.T. SYSTEMS

● **Heating System Supervision:** Electrically supervises temperature, flame failure, oil supply, vacuum, pressure, humidity, current supply, pilot safety, automatic stoker. For coal, gas or oil fired systems.

● **Industrial Process Supervision:** Electrically supervises temperature, humidity, power, water supply, etc., in various industrial processes such as mixing, cooking, drying, cold storage, etc.

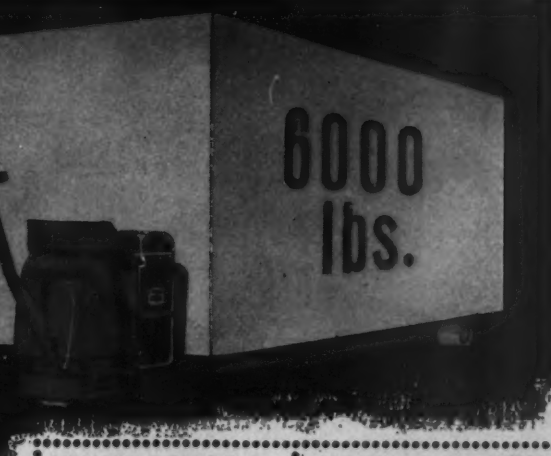
The benefits derived from A.D.T. Protection are far-reaching....May we tell you how it can benefit you? Write our Executive Offices, 155 Sixth Avenue, New York, N.Y., for free descriptive booklets.



Controlled Companies of **AMERICAN DISTRICT TELEGRAPH CO.** 155 Sixth Avenue, New York, N. Y.
CENTRAL STATIONS IN ALL PRINCIPAL CITIES OF THE UNITED STATES

*Let me cut
your handling
costs in HALF!*

Muscle Mike CAN with this Brawny Midget of Electric Trucks



All industry is using this Miracle Electric Truck. In its motor is a Muscle Mike... a brawny midget of electric power that moves up to 6000 pounds with amazing "touch-of-your-thumb" ease.

Its name is Automatic Transporter. You haven't a handling job it can't lick. One man or girl at the control buttons does the work of three husky laborers. That's two-thirds saving in labor alone. Forget about drudgery and fatigue. It's next to nothing. Take it in and out of tight places that would put even hand trucks to shame. It comes through for you without a whimper.

Thousands of these industry-tested Automatic Transporters have been making sensational performance records in every kind of business. Increased production now makes it available to you. But for a while the order will have to be "First come, first served!" Mail the coupon so that we can hurry you the complete facts.

BRAWNY MIDGET OF POWER

IT'S ALL IN

HERE



ONE DOES THE WORK

OF 3!



6000 lbs. 6000 lbs.



**WITH 3 TIMES LESS
FATIGUE**



**TO PILE UP 1/2 TO 3/5
DOLLAR SAVINGS**

Remember: Only AUTOMATIC makes the TRANSPORTER



AUTOMATIC TRANSPORTATION COMPANY
Division of The Yale & Towne Mfg. Co., 115 W. 87th St., Dept. A, Chicago 20, Ill.
Please mail me, without cost or obligation, complete facts about AUTOMATIC TRANSPORTER, the Miracle Electric Truck... plus proof that it will cut my handling costs in half.

Company Name.....
By..... Position.....
Street Address.....
City..... State.....



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Agents



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- ✓ SPOT STOCK DISTRIBUTION
- ✓ INDOOR, PROTECTED LOADING PLATFORM
- ✓ NEW YORK'S LARGEST TRUCK SCALE
- ✓ SPECIAL AIR CARGO PACKING & DISTRIBUTION
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ADDRESS ALL INQUIRIES and CONSIGNMENTS DIRECT TO:

The Manhattan STORAGE & WAREHOUSE CO.

7th AVENUE and 52nd STREET, NEW YORK 19, N. Y. — CIRCLE 7-1700

U.S. ROYAL FLEETWAY plus U.S. FLEET SERVICE

*THE RIGHT COMBINATION
FOR LOWER COST
PER TIRE MILE*



TRUCK TIRE SURVEY CHECK SHEET

NAME OF TRUCK COMPANY: _____

DATE: _____

TRUCK NO. _____

TYPE OF TRUCK _____

TYPE OF TIRE _____

TRUCK TIRE SURVEY CHECK SHEET

TIRE NO.	SP	SPTI	SPTD	SPTO	SPTI	SPARE	DATE
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The starting point of U.S. Fleet Service is a tire survey which will disclose the actual condition of every tire in the fleet, and inform the fleet operator what he must do to forestall premature road failures with consequent time losses and the ruin of carcasses still good for thousands of miles of service. For this purpose, U.S. Truck Tire Survey Check Sheets are supplied.

**PHONE YOUR U. S. TRUCK TIRE DISTRIBUTOR
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U. S. FLEET SERVICE TODAY!**

Listen to "Science Looks Forward"—new series of talks by the great scientists of America—on the Philharmonic-Symphony Program. CBS network, Sunday afternoon, 3:00 to 4:30 E.S.T.

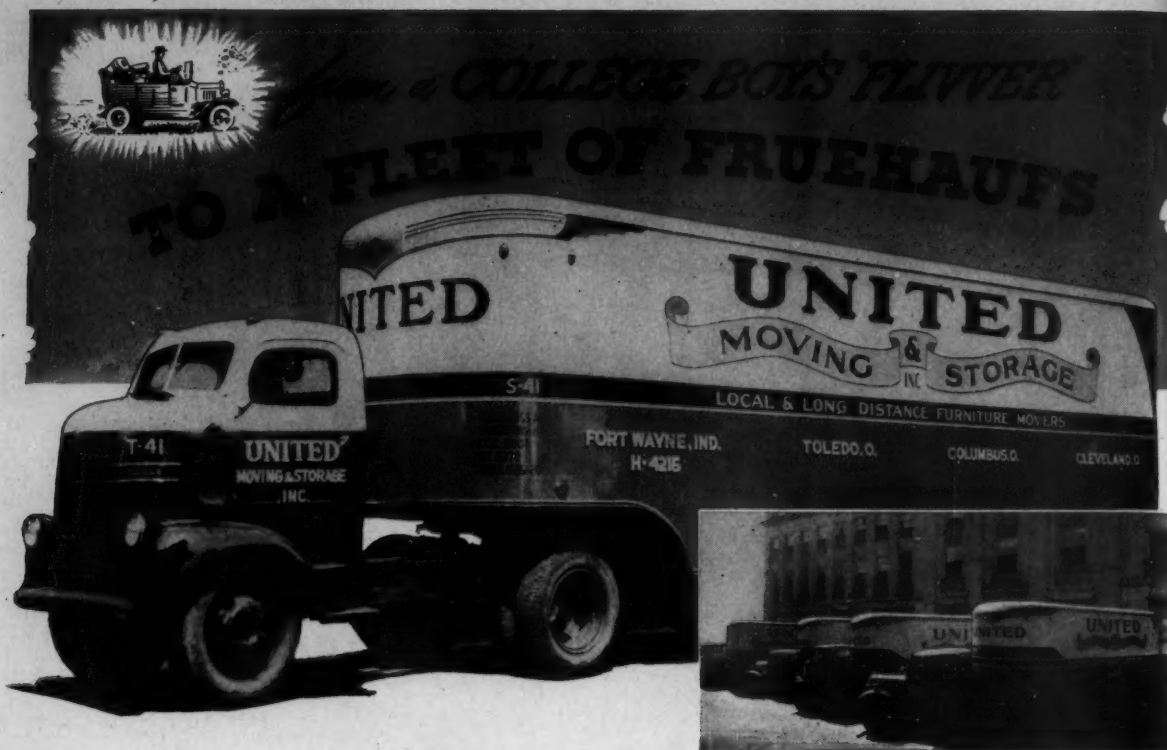


UNITED STATES RUBBER COMPANY

SERVING THROUGH SCIENCE

1230 AVENUE OF THE AMERICAS • ROCKEFELLER CENTER • NEW YORK 20, N. Y.

JANUARY, 1946



IN TRUE Horatio Alger style, W. E. Moore built his business from a rickety old Model T up to a modern fleet of Fruehaufs in 18 years.

Back in 1927, the "flivver" helped Moore earn his way through Ohio State University, hauling bags and trunks for fellow students. Next he found himself picking up a few extra dollars delivering radios to homes for sales demonstrations. Now Mr. Moore is President of United Moving & Storage, Inc., with offices and warehouses in Fort Wayne, Columbus, Cleveland and Toledo.

Upon graduation, Moore continued his business . . . first buying a truck van and then another. In 1932, at the Ohio State Fair, he purchased his first Trailer—a Fruehauf—and it has been Fruehaufs ever since!

United Moving & Storage assisted in moving the offices of the Agricultural Adjustment Administration from Washington to Cleveland, Columbus, Detroit, Chicago, Wheeling and other cities.

Today, the company operates a fleet of 23 Fruehauf Trailers . . . hauling loads into 32 states and the District of Columbia. They have recently added two new 30-foot Vans, with 1850 cu. ft. capacity, and have another on order.

On a recent move, one of the new Vans hauled a 21,000 pound load . . . largest they have carried on a single haul. Normally, the new Fruehaufs haul all the furniture for three 6-room homes on one trip.

Mr. Moore sums it up when he says, "Our first Fruehauf has rolled up over a million miles and is still in daily operation after 13 years' constant service. Need we say more?"

FRUEHAUF Trailers

"ENGINEERED TRANSPORTATION"

REG. U. S. PAT. OFF.

THIS STORY IS AMERICA—
WHERE YOU ARE FREE TO GET AHEAD.
LET'S KEEP IT THAT WAY!

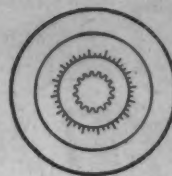
World's Largest Builders of Truck-Trailers

FRUEHAUF TRAILER CO., DETROIT 32

Service in Principal Cities

EDITORIAL

Our Plans and Program



WE are moved by the advent of a new year to reaffirm and clarify the fundamental purpose and policy of this paper, and to outline in simple terms our plans and program.

We hold that every business is engaged in and affected by distribution. All firms, industrial and mercantile, are shippers as well as receivers. All use transportation; all are confronted with handling and packing problems; all are concerned to some extent with the proper storage of raw materials or finished products; all have to deal with vexing financial and marketing questions; all need insurance; all have to consider service and maintenance of one kind or another. These are all phases of distribution, which begins before production with the movement of raw materials, and continues after production until a finished product reaches its ultimate destination, the final user or consumer.

We believe that distribution costs can be cut by better integration of all these phases we have mentioned; that each of these phases can be made more efficient and economical in all branches of commerce and industry by intelligent simplification and standardization of operational methods and practices; and that, as a matter of sound business, a part of the resultant savings should be passed on to consumers to increase buying power. The policy of this publication is to assist business management in the attainment of those objectives. We propose to do this in several ways.

By stressing the advantages of a clearer understanding of functional costs.

By presenting factual articles written so that industrial management can apply the information to its own distribution problems.

By showing that costs can be cut without slashing wages or reducing profits by means of economies obtained through greater operating efficiencies.

By undertaking and encouraging research in all departments of distribution.

By focusing attention on a different specific phase or facet of distribution in each successive issue in order to demonstrate its relation to and integration with all other phases.

For example, each issue will have a major and a minor theme. The major theme will be overall distribution. The minor theme will be one of the eight basic phases of distribution or some related aspect thereof. These themes will be developed and modulated in each issue both independently and together and also with variations.

To be even more specific, the January issue, which you hold in your hand, has as its major theme the overall subject of distribution. Its minor theme is a preview of probabilities in different phases of distribution. Also, there are variations on those two themes.

The February issue will present the functions of warehousing and its relation to other phases of distribution.

The March issue will show how finance and insurance as cost factors in distribution affect and are affected by all other phases.

The April issue will integrate water transportation in the overall distribution picture.

The May issue will suggest ways and means of using rail transportation more efficiently and economically through better integration with other distribution activities.

The June issue will indicate how industrial design can effect efficiencies and economies in every step of distribution: how product design affects containers; shipping practices; handling operations; the payload of carriers; traffic management; warehousing; and most elements of marketing.

The July issue will demonstrate how materials handling begins with the movement of raw materials and is a part of distribution during every step of the distributive process.

The August issue will be devoted chiefly to the marketing of industrial products.

The September issue will deal with the marketing of consumer goods.

The October issue will develop new aspects of how coordination of air and highway transportation can expedite distribution efficiencies. This was done, in part, in our issue of last October.

The November issue will prove that industrial traffic management functions at every stage of distribution to control overall costs. This was accomplished to a large extent in our November issue last year.

The December issue will make it evident that service and maintenance are integral parts of distribution. Last month's issue is a partial example of what we mean.

In a program of the scope we have projected, it may not always be possible to achieve the degree of perfection we now visualize as feasible. Nevertheless, despite our limitations and human failings, we shall strive to demonstrate how distribution can be made more efficient and less costly through better integration of its major phases, and by practical simplification and standardization of operational methods and practices.

This outline of our plans and program reaffirms, crystallizes and projects the editorial policy and purpose of this paper. Half of its success depends on how well we do the job; the other half depends on how well you like what we do. Consequently, your suggestions, ideas and criticism will be most welcome and helpful.

Charles D. Brown

EDITOR

DISTRIBUTION DIGEST

... men ... markets ... products ... previews

PREVIEWS... Many new war materials suitable for clothing are now available to manufacturers. The "Fashions of the Future" exhibit at the recent Congress of American Industry featured many such fabrics...Filmy evening gowns of Fortisan, a material used during the war for balloons and parachutes...gowns of acetate vinyon and nylon...rain suits of Koroseal, a synthetic developed for wire and cable insulation and for face masks and sleeping bags...sandals of Lucite...and many others. Further information may be obtained from the National Assn. of Mfrs., 14 W. 49 St., New York 29, N. Y.

- "Kriston," a new non-flammable thermoset plastic with high optical and electrical properties, is now available to manufacturers and will be used widely during the coming year. It has many applications in the optical, electrical, chemical, mechanical and other fields. The producer, while offering the new material only in liquid monomer form, is preparing to work closely with manufacturers in developing new products. Address B. F. Goodrich Chemical Co., Rose Bldg., Cleveland, Ohio.

- The refrigerator car supply is to remain extremely tight during the first quarter of 1946, ODT reports.

- Five years of intensive research resulting from war urgency have advanced the nation's plastics industry 20 years...From 1939 to 1944 the value of plastics materials increased from 78 million dollars to 332 million dollars, or 235 percent, and an additional growth of from 20 to 25 percent is foreseen in the predictable future, according to views expressed by W. S. Landes, president, Plastics Materials Mfrs. Assn.

- Firms interested in securing widest and most economical insurance protection should investigate "Comprehensive Liability Insurance," combining in one policy many former specific liability policies. During the coming year more and more of this coverage will be written. Read Charles F. Rupprecht's article in this issue.

- Containers made wholly or partially of paper or fibre, in the opinion of spokesmen for the Continental Can Co., Inc., 100 E. 42 St., New York, N. Y., will loom larger than ever in the overall postwar picture as a supplement to metal packaging.

- Unfair distribution practices seem likely to develop during the coming months into a merchandising problem as troublesome as that of wartime black markets...For the purpose of combating all forms of backdoor selling, the "Honest Distribution Committee," formed by distributors and manufacturers in various lines, held its first meeting in Chicago, Jan. 3. For full information contact the chairman, Paul Wolk, president, Bickford Brothers Co., Rochester, N. Y.

MARKETS... The European market offers wide opportunities for American goods but full range, buying is not likely for several years, it is revealed in studies made by the Research Institute of America. Insufficient shipping space, restricted supplies of merchandise and foreign exchange are limitations. Imports, it is believed, will be programmed in the following order: (1) relief goods, (2) reconstruction goods, (3) industrial equipment.

- The growth of the frozen foods industry is expanding markets for equipment of all kinds to protect products through all distributive channels...A large market for

A DEPARTMENT STORE OF *Trucking*

**WITH INTERNATIONAL TRUCKS PREDOMINANT
ON THE HEAVY-DUTY JOBS**

TRANSPORTATION
CONTRACTORS



Here's a gasoline hauling job Willett does with KR-11 Internationals from refineries in East Chicago, Indiana, to bulk plants in Chicago and Northern Illinois.



K-8 International with 22-foot semi-trailer that hauls general freight from the Pennsylvania Depot in Chicago to East Chicago and Indiana Harbor, Indiana. On the return run this truck hauls steel castings from foundries for delivery in Chicago.

Steel deliveries from steel-service plant to users is another contract hauling job Willett does. Deliveries must be made quickly, with the trucks usually carrying a variety of orders and operating in city traffic. The truck in the picture is a K-8 International.



International-powered trains like this one are operated by Willett to haul milk from county collection depots to Chicago plants for pasteurizing. Three such trains, all International-powered, are operated.



EVERYTHING in dry freight from a dining-room chair to a ten-ton cannon; everything in bulk liquids including milk, salad oil, tar and gasoline! That's the transportation job the Willett Company does with more than 1,000 pieces of equipment and 915 employees.

A book would be required to describe the operation. Howard Willett, Jr., Vice President, says his company is a department store of trucking. Three features are outstanding. 1. The astonishing number of different products hauled and the many varieties of transportation service furnished. 2. The flexibility of the operation. 3. The dispatching system that keeps the management's fingers on every truck all the time.

Here are a few examples of Willett transport: Freight from depots to consignees and other depots; steel from warehouses to customers; food from commissaries to restaurants; soap from factory to retailers; flour from mill to bakeries; hardware from wholesaler to retailer; crippled children from homes to schools. The list could be carried on and on.

In Chicago, Willett handles pick-ups and deliveries from about 10,000 customers a day. Willett hauls about 18 per cent of the gasoline and other petroleum products used in the state. And Willett operates a truck-leasing business through a wholly owned subsidiary.

For its heavy-duty jobs, Willett uses International Trucks predominantly. This use is based on the same performance that has earned for Internationals their outstanding record in the heavy-duty field—a record of more heavy-duty International Trucks purchased for civilian use in the last fourteen years than any other make.

INTERNATIONAL HARVESTER COMPANY
180 North Michigan Avenue Chicago 1, Illinois



INTERNATIONAL Trucks

open top dealer cabinets for fresh fruit and vegetable displays, is likely if A. & P. experiments now being made in Columbus, Ohio, are successful. Produce is held at 40 deg. in the open top display section and at 37 to 38 deg. in the storage section.

- Peculiarities of the nation's truck market are discussed in an effective manual, "Truck Selling Simplified," recently issued by The Studebaker Corp., South Bend 27, Ind.

- There is a huge demand for American goods in Central and South American markets but companies planning to enter the field should guard against the possibility of long deferred payment, such as occurred after the last war, owing to exchange difficulties and government controls...Look before you leap, is the advice of experienced exporters.

- Success in foreign markets is largely contingent upon proper sales story presentation. A new firm specializing in foreign language literature, both from the sales and engineering approach, is Guerrero, LeClerc & Van Acker, 227 East 57th St., New York 22, N. Y.

NEW PRODUCTS... "Plastipitch" is a protected metal for roofing and siding on industrial and agricultural buildings. It consists of flat, corrugated or V-crimp steel sheets the surfaces and edges of which have been treated with "Plastipitch," a compound which is said to adhere permanently to metal irrespective of atmosphere temperature and is impervious to salt air and chemical fumes. Address Koppers Co., Tar & Chemical Division, Pittsburgh, Pa.

- Inspectors, engineers, mechanics, scientists and others whose work requires inspection of "hard-to-get-at" places should investigate "Eder-Lite," a new miniature inspection lamp, which can be passed by means of flexible or rigid extensions into openings as small as 5/16 in. dia. Address Harmon & Co., 6 N. Michigan Ave., Chicago 2, Ill.

- An all-magnesium alloy truck with a capacity of 6000 lb., and weighing 103 lb. less than the same truck would in steel, is now available to materials handlers. Address Service Caster & Truck Division, Domestic Industries, Inc., Albion, Mich.

- Single knob precision control for all types of reversible motors is provided in the Yardeny Pulsing Drive, which enables a motor to be continuously rotated in a cw or ccw direction or moved in small increments in either direction. Address Yardeny Engg. Co., 105 Chambers St., New York 7, N. Y.

MEN... Ralph K. Guinsburg, president, I. B. Kleinert Rubber Co... "The war years have demonstrated to department store executives and to the public alike that integrity resides more securely in nationally advertised products where the manufacturer exposes himself to direct public criticism than in any other type of merchandise." Mr. Guinsburg wonders if department stores having at long last made this discovery will continue to be guided by it or, he asks, have they only acquired "foxhole religion?"

- Brig. Gen. Leonard P. Ayres, vice president, Cleveland Trust Co... "Business is entering a primary postwar depression, but a boom of great intensity and probably of considerable duration is in the making." This primary depression, Gen. Ayres told a Chamber of Commerce luncheon meeting, is evidenced by increasing unemployment, declining production and falling national income is to be expected after a great war and coincides with the transition from a war to a peace economy.

- Morehead Patterson, board chairman, American Machine & Foundry Co... Production facilities left idle by war contract terminations are tending to accelerate new goods developments. The adaptability of existing equipment to specific new goods requirements, Mr. Patterson told an ASME meeting, plus the desire to "get going" may lead to trouble unless all distributive angles are first explored... In other words, distribution comes first!

- Capt. S. P. Saint, American Airlines, Inc... The lack of adequate traffic control instruments threatens, more than any other factor, to limit the growth of air commerce. "Air navigation and traffic control development," Capt. Saint told members of the SAE, "has not kept pace with the expanding volume of traffic. Air traffic must be co-ordinated by an automatic control system on the ground. This mechanism system must have the characteristics of a master mind capable of a thousand decisions in the space of time required for a human controller to make one."

The Future Is An Opportunity

By IRA MOSHER

Chairman of the Board
National Assn. of Mfrs.



WHAT'S the nation's outlook? Are we at an economic crossroads? Can full production and full employment be expected in the months and years ahead? Or must we return to the conditions of despair and futility which gripped the nation in the 1930's?

Let's suppose that these questions were asked of representative government or labor leaders. Their answer is on the record. To these men the future of our nation is full of "ifs." They have made plain their lack of faith in America and in the American way of life. We see it in estimates of unemployment during reconversion, and later; in their fears of relaxing wartime controls and responsibilities of government; in the pictures they conjure up of boom and bust in the years ahead; and in the industrial strife of their making that is plaguing the land.

Living Standards

Suppose, however, we ask the same questions of representative industrialists. From them, I can assure you, will come a confident picture of the nation's future. Industrial leaders, the country over, feel sure that we are headed in the direction of full production, full employment, an ever better living for more and more Americans. These men are not kidding themselves. They know that there are and will continue to be roadblocks

We stand at a great milestone in the nation's history. From here out, industrial management has the privilege of taking the lead in showing the world, as well as the doubting Thomases at home, that a nation of free people and free enterprise can produce and distribute as fully and as effectively for peace as it can for war.

and ambushes along the way. But they have faith and vision and courage. They do not doubt but what we will hurdle the roadblocks and clean out the ambushes without losing our stride.

Business Leaders

The war shook this nation out of its economic lethargy and its misguided ways. The ability, vision and courage of industrial leadership were again recognized, and were called upon for a mighty effort by a people face to face with the issue of survival. The character of response is the story of wartime production, which needs no re-telling here. It is the message for the future that we are concerned with now.

During the war, the government had to spend in unprecedented amounts and did. No true American kicked about that. We were spending to save the lives of those who were doing the fighting for us, not to mention our own collective national neck. So the debt piled up, with bonds to match. All told, the government spent in our behalf some two hundred billions of dollars more than it took in through taxes. The savings of workers and all other Americans and of cor-

porations are those two hundred billions of dollars; the bonds that we have not bought directly have been bought indirectly for us by banks and insurance companies. But it is all our savings, and our debt.

It also is purchasing power, with but little for civilians to purchase resulting from its creation. Thus, the balance of pluses and minuses in the equation depends on vision.

I can report that, despite many pitfalls along the way and knotty problems to be faced and solved, the outlook for industry, business, the professions and the nation is good not only for 1946; it is excellent for the years ahead. But what I see is more than just better days; it is an opportunity.

Historic Milestone

In my opinion, we stand today at a great milestone in the nation's history. From here out, we of industrial management have the privilege of taking the lead in showing the world, as well as the doubting Thomases at home, that a nation of free people and free enterprise can produce as fully and as effectively for peace as it can for war.

(Continued on page 79)

By **ARNOLD KRUCKMAN**
Washington Correspondent

How Official Washington



SENATOR JAMES E. MURRAY considers the major premise of integration for broader distribution as sound and incontrovertible.

OFFICIAL Washington holds that our system of production, for the present, has been developed sufficiently. As a corollary, it holds it is now necessary to develop consumption, in order that we may have maximum production. This naturally means fuller employment. The combination of full production and expanded consumption logically means better standards of living. Broadly, it is held in Washington that production facilities for consumer goods can now be employed without having many idle plants; but primary production facilities, including the manufacture of capital goods, are considered to be approximately 500 percent in excess of the current normal market demand.

It should be emphasized that ideas about the relation between the present status of production and the potential prospect of consumption are not held primarily by left-wingers or those we used to call New Dealers. You find these ideas prevalent among influential men and women of all shades of social and economic thought. Men, such as Undersecretary of Commerce Alfred Schindler, regard the

development of a new system by which consumption will be expanded largely a matter of salesmanship. To men of this school of thought selling, advertising and education are essentially synonymous.

Other leaders, such as Representative Clarence F. Lea, chairman, House Committee on Interstate and Foreign Commerce, Secretary of Labor Lewis Schwellenbach, and the former head of the War Production Board, Donald Nelson, see distribution in the same sense as it is defined by DISTRIBUTION AGE.



DONALD NELSON, former head of WPB, points out that the sole purpose of WPB was production concurrently with distribution in the sense outlined by Mr. Lea.

Representative Lea, head of one of the most powerful Congressional committees, who has been a member of Congress for almost 30 years, and who has been a committee head longer than any other member of the House, says:

"The ultimate purpose of distribution is consumption. It is the object of distribution to bring production and consumption together. The concept, as presented by DISTRIBUTION AGE, is broad, but it is correct. All the steps suggested

are valid, i.e., that distribution begins with the movement of raw materials, and that it involves handling, transportation, finance, insurance, packing and packaging, warehousing, marketing, service and maintenance, which, though separate activities, are interdependent and integral parts of the chain of distribution. Transportation, private and public, represents an annual business aggregate of \$20,000,000,000; finance, in its various phases, is an enormous item; but these are separate phases of distribution. It is essential that they be recognized as parts of a whole. It also is essential that we form an intelligent concept of their proportionate relation to each other and to other phases of distribution. But in so doing we must not permit the concept of integration to destroy the primary concept of free, independent enterprise which is inherent in the American way of life. This individual integrity is the ultimate essence of America."

Secretary of Labor Lewis Schwellenbach consistently preaches the

SECRETARY OF LABOR LEWIS SCHWELLENBACH consistently preaches the necessity of tailoring our capacity to consume to our vast productive ability.



DISTRIBUTION AGE

Regards Distribution

necessity of tailoring our capacity of consumption to our vast ability to produce. He regards them as fundamentals in the economic sys-

sources Planning Board, that the integration of the various steps from the production of raw materials until an article reaches its



UNDER SECRETARY OF COMMERCE ALFRED SCHINDLER regards distribution largely as a matter of salesmanship.



REP. LUTHER PATRICK thinks the new concept of distribution should be applied also to conservation of natural resources.



SENATOR ARTHUR CAPPER thinks a broader concept of distribution is greatly needed in the period ahead, not only here but all over the globe.

ultimate destination should be organized into a coordinated system of distribution, as the next step in further developing our economy. The gentlemen are concerned by the lack of any organization in this direction at present, except in isolated instances of great monopolies. They are hopeful that thought focused on the subject may modify

(Continued on page 80)

tem that will supply the answer to many of our labor problems. The picture of the intermediate steps of distribution, as envisioned by DISTRIBUTION AGE, fascinates him. In due time, Mr. Schwollenbach undoubtedly will present his own considered written thought on the subject. Secretary Schwollenbach, and many other Government officials, often would like to speak informally on a subject such as this but the war has engendered a caution which has jelled into a procedure that hampers public expression with restraints that often make formal statements almost meaningless. It is this situation which has given currency to the informal, off-the-record discussions that enable government officials to avoid many embarrassments.

It has been suggested by a responsible official of the Interstate Commerce Commission, jointly with an official of the National Re-

Lea Indorses Concept of Distribution Age

THE ultimate purpose of distribution is consumption. Representative Clarence F. Lea, chairman, House Committee on Interstate and Foreign Commerce, told Mr. Kruckman last month. "The object of distribution is to bring

REP. CLARENCE F. LEA



production and consumption together. The concept as presented by DISTRIBUTION AGE is broad but it is correct.

"All the steps suggested are valid, i.e., that distribution begins with the movement of raw materials, and that it involves handling, transportation, finance, insurance, packing and packaging, warehousing, marketing, service and maintenance, which, though separate activities, are interdependent and integral parts of the chain of distribution.

"Transportation, private and public, represents an annual business aggregate of \$20,000,000,000; finance, in its various phases, is an enormous item; but these are separate phases of distribution. It is essential that they be recognized as parts of a whole. It also is essential that we form an intelligent concept of their proportionate relation to each other and to other phases of distribution.

"But in so doing we must not permit the concept of integration to destroy the primary concept of free, independent enterprise which is inherent in the American way of life."

To evaluate what lies in store for the major phases of distribution on the Pacific Coast in '46, DISTRIBUTION AGE has asked its West Coast correspondent, R. Raymond Kay, to discuss frankly with leaders of industry and distribution, "what is in the cards for '46?" Here is what they say:

Experts

West Coast



Finance

By A. J. GOCK

Chairman, Board of Directors
Bank of America

ANY consideration of the part finance is to play in the expansion of distribution enterprises over the next five years must take into account the whole picture of American business, and particularly the foreign trade.

Because of shortages in commodities of virtually every kind in the domestic consumption field, the emphasis in the press and in general discussion tends to limit itself to the domestic field. We must remember that domestically distribution channels are fairly well established, although due for some expansion. Those who have given closest study to these matters contend that in the direction of foreign trade lie really great opportunities.

Export Trade

In the "normal" prewar year of 1940, the dollar volume of foreign trade through the ports of San Francisco, Los Angeles and San Diego amounted to \$441,045,023, of which \$245,938,089 was export business and \$195,106,934 import.

During the intervening years we have become so used to billion dollar totals that these figures hardly impress us now. Perhaps that is as it should be, because the refusal of the westerner to be awed by totals has been responsible for a lot of our growth. Why not set our foreign trade sights up into the billions and then set about achieving them?

Many contend that for the next five years at least our foreign trade

need be limited only by America's capacity to supply the need in competition with home demands. Thus, the question enters the realm of government "high policy," on the principle that if we now assign for export only such goods as are surplus after meeting home demands, we undoubtedly will find the foreign field has been cultivated and harvested by other nations by the time we are producing beyond our domestic needs.

On the other hand, much will de-

pend upon the financial abilities of our foreign customers.

In the meantime, we in the financing field are in a position to assure western distributors that their own west has abundant dollar resources and an abounding willingness to meet their expanding needs. Commercial banks, in the main, are ready to cooperate with sound enterprise both with operating funds and with term loan capital financing. Risk capital also is available in the investment market, as has been proved many times in recent months.

Obviously, there is plenty of confidence in the future. Bankers have a kinship with distribution services. Just as distribution forms the essential connection between the sources of materials, the processing plants and the markets, so finance fills the arteries of business with the vital blood which provides



Packaging

By CHARLES CRUZE

Packing and Packaging Designer
Los Angeles

THIS is a fast-moving world with exciting changes afoot. Now that the war is over, new materials are available. The manufacturer who doesn't take advantage of them both for new and old products is missing a bet. We feel that this is particularly true of the "forgotten package"; i. e., the shipping container.

There are three things that the designer should try to establish in the shipping container of 1946 if he wishes to realize the utmost benefit from it and also meet on-

coming competition. (1) The container should be engineered with the best size for shipping, handling, and storing; (2) it should be engineered with geographical awareness; and (3) it should be designed for functional advertising.

As an example, recently, while in conference, a large manufacturer asked how shipping costs might be cut. Although he always insisted on standardization in his plant, we found that he was using 162 different sizes of shipping containers.

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Forecast

Distribution Trends

sustenance, strength and growth to the whole healthy body of business activity.

The spirit of enterprise which permeates all western activity precludes any fears for our future. This spirit is the same which impelled A. P. Giannini to create in California barely more than 40 years ago the bank which has now forged ahead, hand in hand with our west, to a position of world pre-eminence.

Who doubts that, working together, we can continue to meet both challenge and opportunity? There will be problems, some now unseen, some now beginning to take recognizable form. We will need vision, intelligence, patience and faith; we will need to be more watchful than ever of our rights of free enterprise while at the same time being alert to accept the responsibilities these rights entail.

Railroads

By A. T. MERCIER

President,
Southern Pacific Co.



OUR major job during the fore part of 1946, particularly from a passenger traffic standpoint, will continue to be the return of men and women of the armed forces to their homes. Present estimates of military and naval authorities on the return and redeployment of service personnel indicate that this final phase of the railroads' war job will near completion about the middle of this year.

However, while giving full attention to the passenger and freight requirements of the military, Southern Pacific is not overlooking the early postwar needs of industry in reconverting to peacetime activity.

Included in the already announced additions and improvements to the railroad's plant during 1946 are 3550 units of freight equipment and sufficient heavy rail to relay 725 miles of track. Also on order for some months are 500 box cars of lightweight steel construction, all of which will be delivered early this year. Total expenditure for the rail and 4050 freight cars is about \$25,600,000. Among the cars are various types of most modern design for handling special shipments, also 50 steel cabooses with bay windows replacing the conventional roof-top cupola.

Warehousing

By J. W. HOWELL

President
American Warehousemen's Assn.



IN 1946 storers in all parts of the country who use west coast public warehouses can expect better service than they have been having. While the transit of returning soldiers and sailors through our ports will continue to put a heavy, but welcome, load on our transportation system and the supplying of our many thousands in the forces of occupation, for some time, will utilize much of our space and man hours, the big job of handling war materiel is over the hump. While in most places we are

still short of men, and the efficiency of some of our replacements is low, we will be better able to serve commercial business in the coming year than in the past.

We warehousemen can expect in 1946 a volume of distribution business that will be greater than that of 1941. The increase in population has been tremendous and most of the wartime influx intends to stay here. The needs of all west coast communities will correspondingly increase and their needs will
(Continued on page 78)

Freight Service

Among improvements in Southern Pacific freight service will be the resumption, as soon as conditions permit, of the "overnight" merchandise freight train' coordinating truck pickup and delivery in speeding less than carload shipments from metropolitan centers to inland cities for distribution in adjacent territory. This highly modernized freight service, suspended during the war because of the unprecedented volume of traffic, was
(Continued on page 78)

Marketing

By **WILLIAM DOVER**

*Manager Business Research Division
Los Angeles Examiner and
Southern California Chapter
American Marketing Assn.*

IF the dual goal of high production activity and generous employment levels is to be achieved in the foreseeable future, there must be a continuing and unprecedented expansion of marketing and selling enterprise.

This country's vast manufacturing and agricultural output must be channelled through the most efficient avenues of distribution; which, in turn, by placing the products of American industry before more people at prices they can afford to pay, will automatically inspire that stimulated ratio of consumption without which increased production alone becomes but another handicap in the path of post-war enterprise.

There has been no complete census taken of distribution functions since 1939. Consequently, there is a general current lack of adequate information concerning the number, size, and operations of our wholesale, retail, and service

establishments. Important wartime shifts in the distribution of population; in the ability of these people to purchase more and better goods; in the amount and type of merchandise available for sale; and in the character and volume of dis-

tributive businesses, have taken place during the past five years.

This condition merely emphasizes the importance of the distribution function as a more efficient unit contributing to the postwar objectives of sustained high income and gross national product. Just one point well serves to illustrate this importance:

Mass production deals principally with machines, whereas marketing deals with people. Greater production entails more efficient machinery, producing at a greater and faster rate. Marketing, however, which is the profitable and eco-

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Air Cargo

By **RAY GRANT**

*Manager Cargo Dept.
Western Air Lines*

DAILY scheduled air freight services by three airlines now serve the Pacific Coast. This service speeds the movement of air freight east and west and calls for second day delivery in both directions. It opens new, faster and more direct customer service for thousands of manufacturers, grow-

ers and shippers at new low rates.

The Pacific Coast has a great potential in the development of air freight. Research and experience to date shows a predominate flow of traffic eastbound consisting of perishable items and westbound in general merchandise and also perishable traffic.

The acquisition of new aircraft built for the carriage of cargo will allow a general downward trend of cargo rates as operating costs will be reduced.

The development of contract freight services on a non-scheduled basis has been under trial by some of the airlines and private operators. Their experience has proven a serious need for more suitable aircraft for payload freight operations as to payload, cabin temperature control, cabin design and tie-down devices. Airport facilities for this type of operation on the Pacific Coast are not adequate. Greater length runways with more durable strength to withstand heavier cargo-laden four and six-engine planes are a "must" if volume freight service is to be a success. Other facilities such as temperature controlled storage space, loading docks and loading equipment are necessities that must be worked out and made a reality without delay.

Western America has a promise of a new era in the transportation of property by air.

Trucking

By **G. G. GRANT**

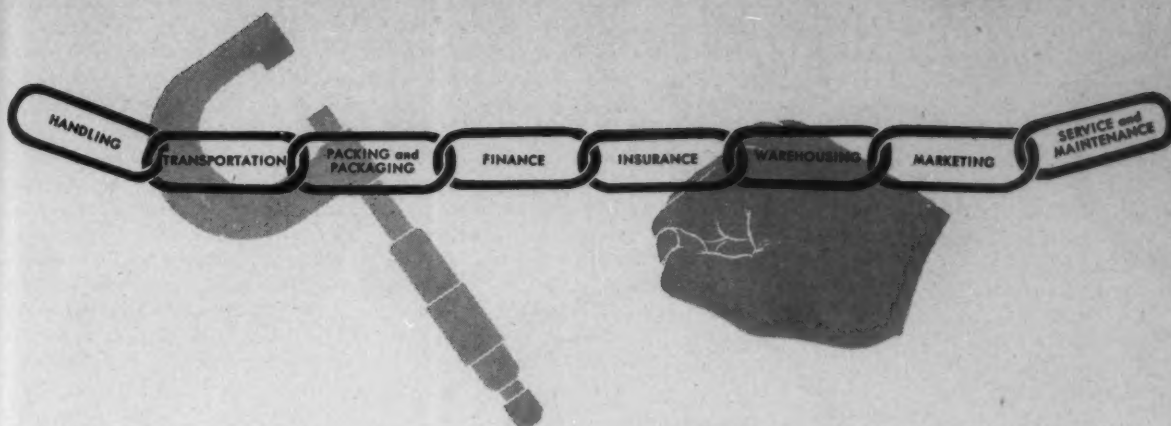
*Executive Secretary
Motor Truck Assn. of So. Cal.*

WITH the opening of navigation along the Pacific Coast, it is definite that a greatly expanded program of water-borne traffic can be anticipated in 1946. Harbor cities are preparing to enlarge and improve their port facilities.

Many new industrial plants have been and are now being located on the Pacific Coast. Distribution from these plants will be made directly through these ports as well as along the coast by truck. Trade with South American countries will definitely be on the increase over the prewar period; this added tonnage will be largely water borne through these harbors. Devastated

countries and our own possessions and territories will need material and supplies for rehabilitation. Much of this will come from this area.

It becomes apparent that the motor truck industry is faced with the necessity of expanding terminal facilities and operating equipment. This is in the process of being worked out, and much of the expansion program has been off the drafting tables for some time. Truckers are facing difficulty in obtaining new equipment, but it is anticipated that this will be overcome and the forward movement given added and prompt impetus.



Distribution and Employment

To achieve real scientific marketing, top management must utilize engineering research methods. There is a great contrast between the scientific control of processes of production and the rule-of-thumb which is present in almost every step in the chain of distribution. We will not be aware of the magnitude of distribution until we all see its true costs and their relation to our economy.

SUBSTANTIALLY full employment by next September (1946) is predicted, when the reconversion of virtually all plants from war to peace production is expected to be finished. There are other predictions by economists that seven to 10 million workers will be unemployed in the interim period. But the major problem will come later: to design a distribution system that must sell more goods than ever before if the wheels of production are to be kept running and full employment is to be maintained.

There are all too few companies asking these three basic questions: (1.) What is the extent of this problem of distribution? (2.) When will this problem come? (3.) What can we do about it now?

The extent of the problem is essentially that the American consumer will have to be sold almost double the amount of his prewar consumption or else our productive capacity will have to be drastically curtailed. It is a matter of pumping 160 billion dollars' worth of products through a system which

By **WILLIAM E. HILL**

Vice President
Turck, Hill & Co., Inc.
New York

before the war, accommodated roughly only 82 billion. It is, therefore, more than a problem of merely meeting competition and keeping costs down.

The real employer of productive labor is the consumer. Consumer demand dictates the number of factory jobs for our industrial system. If the consumer does not buy, there will be few jobs. The current concern with production has unfortunately submerged the immediate importance of this essential. The progressive companies have not lost sight of it, however, and are preparing for the day when they will inevitably face it.

One approach to the measurement of the importance of distribution

This is part of a paper read by Mr. Hill recently before a conference on "Engineering for Improved Distribution" at the Newark College of Engineering, Newark, N. J.

bution is an analysis of the total and unit costs of any product.

Our firm often has such an assignment. In a recent study of a client's cost of distribution, we found that it was 58 percent of the combined cost of distribution and manufacturing. In another case, the cost of distribution was 50.3 percent of the retail selling price. The cost of manufacturing was only 36.2 percent. Time and again we see this relation between distribution and manufacturing.

Unfortunately, general data on this subject is just beginning to be developed. We will not be aware of the magnitude of distribution until we all see its true costs and their relation to our economy.

Another approach is to notice how dependent our labor force is on distribution. Manufacturing, which depends completely on the marketing of its goods, in 1939 accounted for 22.5 percent of our total civilian employment. That same year, trade alone accounted for another 14.6 percent—a total of 37.1 percent in these two categories alone.

Before we attempt to judge finally the importance of distribution, let's be sure we are in agreement about the meaning of the term. Distribution, as defined at a meeting of the Committee on Distribution of the American Society of Mechanical Engineers, is the total of all activities involved in the progression of goods from the producer to the consumer. It includes warehousing, transportation, wholesale and retail marketing, advertising, and a substantial part of research, engineering, accounting, and finance.

My partner, Fenton Turck, chairman of this committee and a great leader in the actual development of more scientific distribution has supplied a real service. It is more than just a definition. It is a word picture of the broad scope encompassed by the subject.

What price a fraction of a cent saved by an improvement in production technique if dollars are wasted in distribution?

Illustrations

Perhaps it is best to illustrate the need for facts by showing how three companies have recently used facts as a basis for developing their respective postwar programs.

Company A formerly distributed a line of marine products through a national sales agency. It was not in direct touch with its market and had great difficulty in relating market demand to pricing, design, production, and other important elements of its business. Furthermore, it solely made a manufacturing profit.

The war interrupted the manufacture of this line and provided the manufacturer with the opportunity of divorcing the relationship with the sales agency. Approaching the wide-open problem of how to distribute its products after the war, this company based each step in the development of its program on an engineering investigation of the facts pertaining thereto. These were the principal steps:

a. Analysis of the market—its potential, characteristics, competitive nature, distribution methods of other companies, and related factors.

b. Form of distribution—decisi-

sion to distribute through independent wholesale distributors and one private brand, as against distributing direct, through dealers, jobbers or other channels.

c. Layout of territories for national distribution—by relating all pertinent consumer, waterways and economic data to provide distributors with sufficient volume to justify a thorough merchandising job.

d. Selection of distributors—analysis and evaluation of all available firms.

Diversification

These firms are now being franchised to handle this manufacturer's line. There is confidence that this program will be successful. It is supported by all the facts available through modern management research.

Company B had grown 30 times prewar size. Its main problem was the determination of those markets in which it could most advantageously apply its war-born techniques of manufacture.

This company charted its diversification program and product development through the use of scientific analysis. The following results were achieved:

a. Analysis of prewar business—an inventory and projection of its prewar business now permits the budgeting of this phase of its operations.

b. Railroad equipment—based on an analysis of possible markets, this field represented the best opportunities for this company, with the result that the main efforts of sales, engineering, product development and production are concen-

trated in this field with astounding results.

c. Specialty products—the development of all specialty products is now based on a factual analysis of the respective markets.

The use of facts in market analysis is now a habit with this company, paying handsome dividends in postwar business. As a matter of fact, the finding and use of distribution facts on which to base management judgment is a habit at duPont. General Motors has acquired the habit, perhaps sponsored by the duPont ownership. But there are many companies, large and small, whose managements resent the implication that factual analysis is needed to support their judgment. This is human but shortsighted. Furthermore, sales research and selling are separate but related functions. There is much existing confusion on this point.

Aphorism

The old aphorism, "Look before you leap," was never more applicable than today; we need a great deal more scientific "looking" before we leap into wasteful and profligate sales campaigns.

To achieve real scientific marketing, top management must utilize engineering research methods. It is not sufficient merely to add a few file clerks at the home office to accumulate "hit or miss" information sent in from the field. The time is rapidly approaching when the struggle for new business and the retention of valuable accounts will make this painfully evident in the balance sheets of those companies who are not aware of this fact today.

The complexities of present-day management are forcing a wider and more specific analysis of the business problems that are faced by corporate administration. The recognition is growing of the need for scientific fact gathering to serve as a basis for company operations and projections. But it is by no means a widely accepted practice, as you well know, with many a business management relying on the old "hunch and heave" procedure. On the other hand, many of

(Continued on page 88)

Great Lakes Canal

It is expected that construction of urgently needed channels between Great Lakes ports will be undertaken in the near future. One of the proposed projects is the Lake Michigan-Lake Superior ship canal. If these two lakes were connected by means of a 30 mi. canal, it is claimed that the round trip between Duluth and Chicago could be shortened by 360 mi.

Some observers believe that construction of the new canal would make possible 12 additional round trips per season for freighters operating between the two ports. (Hubbel)

THE ORBIT OF DISTRIBUTION

1946



IN 1846, Galle, German astronomer, aided by the computations of Leverrier, French mathematician, discovered the planet Neptune. That discovery, regarded as the most remarkable astronomical achievement of the 19th century, demonstrated the power of mathematics to calculate accurately the position and movements of a major planet.

IN 1946, business men of the United States are discovering that the world of distribution revolves in an orbit of eight major phases. As the terrestrial world revolves in space it passes through the seasonal phases of spring, summer, autumn and winter. Similarly, distribution, in its complete orbit, passes through the eight commercial phases illustrated above.

CURRENT TRENDS

Labor disturbances, higher wages and rising prices of materials and equipment are expected to increase distribution costs generally. Outstanding current trends in each of the eight major phases of distribution may be summarized briefly as follows:

HANDLING:



Increased use of palletized unit loads. At present, however, this is stymied by application of commodity freight rates to pallets. A movement to correct this seems likely.

Adoption by industry of many improved handling methods developed by army and navy during war may not be as extensive as formerly believed.

Modernization of wharfs, docks and terminals to permit more extensive use of mechanical handling equipment.

Introduction of lighter weight equipment.

More scientific costing of handling operations.

TRANSPORTATION:



More extensive use of air cargo not only for shipment of perishable, fashionable and high value products but also for household goods and other bulk commodities of relatively low density. Lighter weight planes, trucks, trains and ships with greater carrying capacity and increased speed.

Continued pressure for simplification of freight rates.

Movement for uniform state laws regulating highway carriers.

PACKING and PACKAGING:



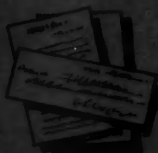
Experimentation with new wrapping and container materials.

Broader acceptance on the part of management that product design can be used to control overall distribution costs because product design affects containers, shipping practices, handling operations, traffic management, the payload of carriers, marketing, insurance rates, capital turnover and the service and maintenance both of equipment and of products before and after sales.

Greater use of pre-packaging for perishables.

New developments in methods of gluing corrugated containers together on a pallet to make a non-shifting unit load.

FINANCE:



Wider use of cold warehousing for inventory financing. Growing insistence on simpler and more uniform costing methods.

Increase in short term loans.

Stricter credit controls.

Resumption of installment selling practices.

IN DISTRIBUTION



INSURANCE:



Development of air cargo underwriting, and of comprehensive liability insurance.
Controversy as to whether insurance should be regulated by states or the federal government.
Continued growth of extended insurance coverage, which includes indemnity for damage by windstorm, smoke, wedge, hail, aircraft falling against buildings, etc.
Automobile financial responsibility laws may be altered in several states.

WAREHOUSING:



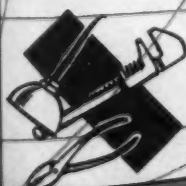
Increased offering of accessorist and marketing services by public merchandise warehouses.
Development of merchandising activities by household goods warehouses.
Wider use of cooler space in refrigerated warehouses by manufacturers and dealers for maintenance of pre-sale merchandise of non-perishable character.
Continued expansion of locker plants.

MARKETING:




Continued growth of chain stores, cooperative buying and selling organizations, syndicates buying on the part of independent retailers, self-service stores in most retail fields and resumption of installment selling.
More aggressive selling of nationally advertised brands in competition with private brands.
Development of wholesale chains.
Increased demand for frozen foods and possible modernization of stores and fixtures to meet new demands. Predictions in this field indicate there will be 250,000 retail stores equipped to handle frozen foods by 1950.
Present trends indicate specialty stores will assume more and more the character of general stores.
Lower mark-up and faster stock turnover.
Both in wholesaling and retailing there is likely to be stricter accounting to control costs and to furnish better operating data.
More intensive marketing research and product testing.
Increase of direct sales to retailers by manufacturers through their own wholesale branches.
Further extension of price maintenance and growth of other competition-limiting practices.

SERVICE and MAINTENANCE:



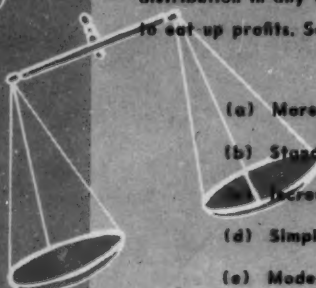

Costs of service and maintenance for all distributive industries are going up and no decline is looked for in the immediate future. Distribution Age has determined through a special survey. Labor demands and rising prices are viewed as major causes. The survey disclosed a basic need for better costing, and for greater simplification and standardization of methods and practices through concerted action by individual industries and trade associations. The survey indicated also need for more adequate research to determine the extent that service and maintenance expenses affect the overall cost of distribution.


CURRENT NEEDS IN DISTRIBUTION




1. BROADER CONCEPTS. Specifically, recognition of the fact that distribution embraces all activities incident to the movement of goods in commerce; it begins with the movement of raw materials and continues until a finished product is in the hands of the ultimate user or consumer, and involves about major phases, namely, (1) transportation, (2) handling, (3) packing and packaging, (4) finance, (5) insurance, (6) warehousing, (7) marketing, (8) service and maintenance. Realization of this fact will change future costing methods and improve all distribution practices.

2. SIMPLIFICATION AND STANDARDIZATION. No basic standards have ever been established in distribution in any way comparable with production standards. Until this is done, costs will continue to eat up profits. Some of the things needed include:


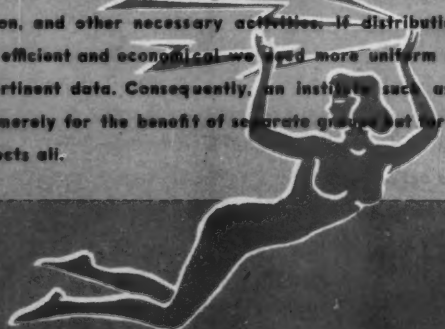
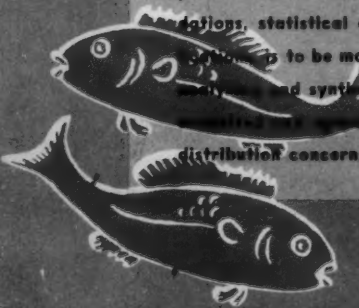
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- (a) More scientific design of products, containers and carriers.
 - (b) Standardization of packing and shipping practices.
 - (c) Increased use of mechanical handling equipment.
 - (d) Simplification of freight rates by all carriers.
 - (e) Modernization of warehouses and terminals.
 - (f) Clarification and simplification of insurance coverage.
 - (g) Development of a standard cost accounting system that will show cost factors in distribution more clearly and comprehensively.
 - (h) Adoption of uniform state laws for the regulation of highway traffic, the size and weight of vehicles, and the taxes and fees to be levied thereon.
 - (i) Establishment of standard operational dimension points and load capacity factors for materials handling equipment.
 - (j) The use in international trade of a single system of weights and measures, preferably the metric system.
 - (k) Development of uniform standards for the compilation of basic economic statistics.
 - (l) Establishment of an international bureau of standards.



There are only a dozen of the more conspicuous general needs. In addition, every industry has methods peculiar to itself that can be simplified and practices that should be standardized for more efficient and economical operations.



3. COORDINATION AND COOPERATION. To further the ends enumerated above, DISTRIBUTION AGE advocates the establishment of a National Institute of Distribution. Such an organization should be founded and supported by national industrial and mercantile associations collectively, for purposes of education, research, cost studies, planning, industrial coordination, legislative recommendations, statistical compilation, and other necessary activities. If distribution, in all of its ramifications, is to be made more efficient and economical we need more uniform methods of collecting, analyzing and synthesizing pertinent data. Consequently, an institute such as proposed should be established not merely for the benefit of separate groups but for all industries, because distribution concerns and affects all.



Distribution Logistics Must Improve

By J. LEO COOKE

Vice President
Lehigh Warehouse & Transportation
Co., Inc.
and
Lackawanna Warehouse Co., Inc.
Newark, N. J.

Criticism of the cost of distribution will grow sharper when jobs and incomes begin to decline. In the past, it was the manufacturer who produced most efficiently who prospered. In the period ahead, with manufacturing processes virtually standardized, it may well be that only the manufacturer who distributes most efficiently will succeed.

LOGISTICS is not a new word, but one that has been used frequently during the recent war years. Much has been said of the "science of logistics" in relation to military operations; some have even said that "logistics won the war." However, virtually everyone will agree that much credit must be given to the accomplishments in storage, handling and transportation achieved by the armed services during the war. Further, there can be agreement that these accomplishments were possible because the leaders chosen to handle these activities for the army and navy were men with complete knowledge of their particular problems, men who knew how to use the "tools" at their command. Because of this, they were able to solve the problem of "military distribution."

Now that peace is at hand, and the battle of business has begun, what can be done to solve the problems of distribution here at home? In the increasing attention being given distribution, particularly during the past year, most of the authorities seem to be in agreement that distribution costs are too high. It is generally agreed that something should be done to lower these costs.

Distribution Costs

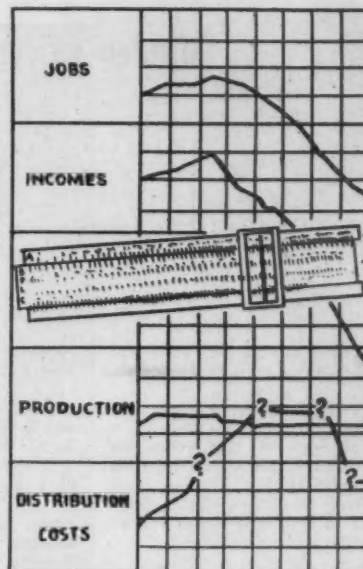
In an era when men have come to think in terms of lower production costs, in which mass production is regarded as the means of lowering retail prices and thus raising the general standard of living, it is disconcerting to realize that 59 percent of what the con-

sumer pays is not for fabricating commodities but for placing them in the user's hands after they are manufactured.

The trend of thought which has been continually growing since the first census of distribution costs was taken in 1929, has been increasingly concerned with the costs of distribution. For the most part, economies in distribution still have to be effected. Advertising, for example, by broadening the consuming market, has enabled a broader mass production, and has helped to reduce production costs. But, as a selling tool, as an integral part of distribution, it has done little to reduce distribution costs. Transportation of raw materials to the factory, which is distribution to the producer of the raw materials, has been refined in efficiency through effective pooling of shipments; but transportation of many finished products still offer a broad field for improvement.

Actually, certain phases of distribution have contributed generously to lower costs of production. The factory as a buyer of raw materials occupies much the same position in relation to the mine as the public market occupies in relation to the factory as a seller of finished products. In that sense, distribution has been refined to a point where it not only fosters production efficiency but also may serve as a model for wider efforts to reduce distribution costs.

This problem needs to be attacked with the same systematic determination that production costs were attacked during these past few decades. The difficulty in studying distribution has always



been in systemizing facts, in defining the boundaries of distribution. Distribution activities depend more on abstract relationships than on technological processes. Production is largely a physical science, based on considerable quantities and qualities of materials and energy. Distribution might be considered more as a social science, as it is based largely on human factors and many intangibles.

Logical Methods

Distribution economies can be effected only by a better understanding of the factors involved, by a more logical application of fundamental economics, and by a more general appreciation of methods and processes which have

(Continued on page 92)

COMPARISONS

This compilation in parallel columns, of some of the outstanding facts and events of the year 1846 and of similar facts and events current today, is an interesting and curious study of historical comparisons and contrasts.

From the facts presented, it is difficult to escape

the conclusion that while the world has made notable scientific and material advances during the past century, it is confronted still with war, famine and pestilence in many places and with widespread economic and political uncertainty.

Tremendous progress has been made since 1846

UNITED STATES

1846



James K. Polk (D., Tenn.) was serving as the 11th President.

War was declared with Mexico as a result of the annexation of Texas in 1845. Men enrolled in the U. S. Army totaled 112,230. Lt. Gen. Scott and Maj. Gen. Taylor, later 12th President, were the chief military leaders.

The Oregon Treaty was signed with Great Britain. Both Great Britain and the United States having claimed the territory west of the Rockies and north of Mexico to Alaska, the area was divided between the claimants at the 49th parallel.

The national debt was \$15,550,202.

Abraham Lincoln was elected to Congress from Illinois.

Iowa was admitted into the Union as the 29th state.

Boston, Albany, New York, Philadelphia, Baltimore and other cities were connected by telegraph.

Elias Howe, Jr., received a patent for the first complete sewing machine.

1946



Harry S. Truman (D., Mo.) is serving as the 32nd President.

Demobilization of 12,000,000 men in the armed forces following conclusion of World War II in 1945 continues. Gen. Marshall, Eisenhower, MacArthur, Bradley, Patton and Adm. Klieg, Nimitz, Mahoy Spruance, Kinkaid were outstanding army and navy leaders.

Preparations for drafting peace treaties with Germany, Italy and Japan are being studied by the State Department.

The national debt exceeds \$265 billion.

The memory of Lincoln is honored internationally and his speeches have become classics.

Iowa ranks 20th among the states in population and is the world center for popcorn and smother seed.

International radio communication is firmly established. Radio and television are expected to have large commercial possibilities.

Development of synthetic rubber, textiles, plastics and other products opens opportunities for the introduction of many new types of material.

The rotary printing press, which made cheap newspapers possible, was invented by Richard M. Hoe.

Cyrus McCormick perfected his reaping machine.

Discovery that inhalation of ether prevents pain was made by W. T. G. Morton in Boston.

The Smithsonian Institution, "designed for the increase and diffusion of knowledge among men," was established at Washington, D. C., by means of a legacy of \$515,000 bequeathed for the purpose to the U. S. government by James Smithson, an Englishman.

The Tariff Act of Aug. 6, 1846 created the general customs bonded warehouse system in the U. S.

Scientific research in mechanics and in atomic energy is expected to revolutionize many aspects of modern life.

Extensive use of sulpho drugs, penicillin, blood plasma and other war-time developments in medicine and surgery are altering medical practice.

Today, branches of the institution include: the National Museum, National Gallery of Art, National Collection of Fine Arts, Freer Gallery of Art, the International Exchange Service, Bureau of American Ethnology, National Zoological Park, the Astrophysical Observatory, with four stations at Mt. Wilson and Table Mountain, Cal., Montezuma, Chile and Tyronne, N. M., where the Division of Radiation and Cosmics is located.

A bill now pending in Congress extends to qualified bonded warehouses the benefits of customs privileges now in effect under the Foreign Trade Zone Act of 1934.

EUROPE

1846



Victoria was queen of England and Sir Robert Peel, sometimes called "the founder of Scotland Yard," famous in police annals, was Prime Minister.

1946



George VI, great grandson of Queen Victoria, is King of England and Clement R. Attlee, leader of British Labor Party, is Prime Minister.

and CONTRASTS

in all fields of applied science, in industrial production, in commercial organization, in methods of transportation and communication. On the other hand, it is questionable whether the world as a whole enjoys any more economic security, political stability, or higher cultural and spiritual

standards today than it did 100 years ago.

Perhaps a clearer understanding of these facts will enable us to appraise the men and events of our time more realistically and with broader tolerance. After all, history, for the most part, merely is a series of variations on a few themes.

Louis Phillippe was king of France. Economic conditions were unsettled and political unrest was fermenting the Revolution of 1848.

Frederick William IV, king of Prussia, was attempting to consolidate all German states into an empire.

Italy had no political unity and consisted of several rival states.

Nicolas I was the reigning czar of Russia. He reduced the kingdom of Poland to a Russian province and pursued a policy of attempting to Russianize all fragments and dependencies of his empire.

Guncotton was invented in Germany by Christian F. Schönbein.

The planet Neptune was discovered by Johann G. Galle, German astronomer, aided by mathematical computations of Urbain J. Leverrier, French mathematician.

Sir William Armstrong's hydraulic crane was patented in England.

The Great Famine occurred in Ireland caused by repeated failures of the potato crop and was succeeded by pestilential diseases which killed multitudes. Several countries, including the U. S., sent provisions and other succor.

Emile Zola, first Frenchman, was elected president of the French Republic. has proposed nationalization of credit, mines and electric power.

Wrecked and bankrupt by the war, Germany is occupied and divided into four military zones controlled by U. S., British, Russian and French forces.

Destitution and famine conditions exist in Italy as a result of the war. It is controlled by Allied military officers.

Joseph Stalin, premier, Union of Soviet Socialist Republics and virtual dictator of Russia, apparently is pursuing a policy of military, economic and political domination over all countries adjacent to Russia.

British-American scientists and German specialists are completing studies of German jet-propelled rocket installations and are experimenting with advanced aero-dynamic techniques.

Russian scientists, aided by German physicists captured during the war, are reported to have discovered new methods for the release of atomic energy. First practical application of atomic power was made jointly by U. S. and British scientists in 1945.

American mechanized materials handling equipment, introduced in all parts of the world during the war by U. S. army and navy, is expected to become a major factor in the development of more efficient and economical distribution.

The United Nations Relief and Rehabilitation Administration is contending with malaria and contagious diseases throughout the war-ravaged countries of Europe.

Financial disturbances in England, caused by withdrawal of capital from other industries for investment in railroad construction and stock speculation, were responsible for more than 200 acts regulating railroads being introduced in the House of Commons.

The United Labor Party, which controls the House of Commons, has introduced legislation for nationalization of banking, inland transportation, mines and iron and steel production.

ASIA

1846



Taukwang was emperor of China. Treaty concessions to foreign powers for trade and exploitation of the China market were partly neutralized by the intense hostility of the people.

In Japan dissatisfaction was growing among the samurai (military caste) with the shoguns (rulers) who years previously had usurped the temporal powers of the Mikados. It was not until 1853 that Commodore Perry opened intercourse between Japan and the rest of the world.

1946



Generalissimo Chiang Kai-shek, president of the National Government, lately engaged in armed conflict with Chinese Communists for control of Manchuria and northern China. He committed, as also are his political opponents, to a policy of neutralizing post-war trading restrictions formerly enjoyed by foreign powers.

Defeated by the U. S. in World War II, Japan is occupied by Allied military forces. Hirohito, the emperor, takes orders from Gen. MacArthur, commanding the forces of occupation, who directly is absolute ruler of Japan.

Sources: Manual of Universal History, Facts; Cyclopedia of History, Wells; History of Western Europe, Robinson; History of Western Civilization, Barnes; America's Economic Growth, Shannon; Harmer's Encyclopedia of United States History; Johnson's Universal Encyclopedia; The New York Times and The World Almanac, compiled by Charles Downes.)

DESIGN of Things to Come

Business men must realize that distribution begins with the movement of raw materials, and continues after production until the finished product is in the hands of the final user or consumer. They must profit from the lesson of global war, which indicates that the various phases of distribution can be integrated for greater efficiency and economy through the application of industrial design.

By MARTIN ULLMAN

Industrial Design Consultant

"MORE things for more people," one of the most frequently quoted slogans of this publication, will become a reality rather than an ideal.

Application of the principles of industrial design made possible the military distribution which helped win the war. The same principles must be adapted to commercial distribution by American management. In business, as in war, optimum production alone is not enough for victory. To optimum production we must add a system of distribution which will insure an efficient and economical flow of goods from producers to consumers.

Military distribution was successful because it was possible to integrate the design of war products, containers, carriers, handling equipment, and warehouses within the unifying framework of the armed forces. Since commercial distribution lacks this unifying framework, we must substitute in its place a complete understanding of distributive problems on the part of management.

More Efficiency

Business men, although they may be involved with only one phase of distribution, are concerned with all phases. They must realize that distribution begins with the movement of raw materials, and continues after production until the finished product is in the hands of the ultimate user or consumer. They must

profit from the lesson of global war, which indicates that the various phases of distribution can be integrated for greater efficiency and economy through the application of industrial design.

During the war, full cognizance was taken of the fact that product design affects containers, shipping practices, the payload of carriers, warehousing, and service and maintenance. Product design affects all of these phases in commercial distribution and, in addition, the factors of marketing and insurance.

During the war, military products were standardized and simplified to their functional uses. This made possible easier, speedier handling, packing, transportation, warehousing and maintenance. If management tears this page from the military scrap book, it will omit unnecessary and expensive filigrees in the design of postwar products and containers. Not only would such action on the part of business men tend to cut distribution costs, but it would stimulate sales to veterans, millions of whom have been conditioned to prefer the elimination of the superfluous from the products they use in their daily lives.

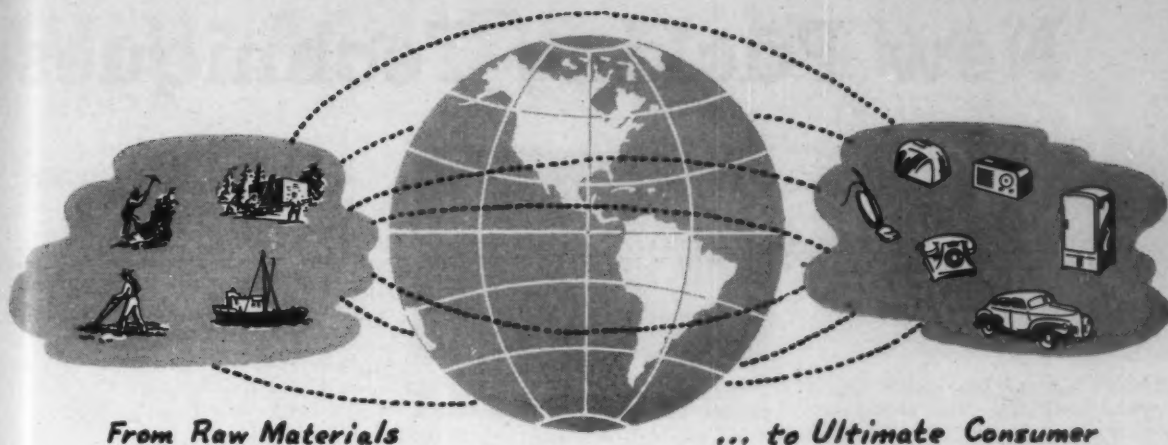
Unfortunately, a trend toward modernization, standardization and simplification has not yet developed. In some instances, the trend

is in the other direction. Processors of frozen foods, for example, are using prewar methods of packaging which were developed by the ice cream industry. Such duplication of an obsolete container is calculated neither to reduce distribution costs nor to attract new customers.

Feminine Appeal

Manufacturers of men's cosmetics, including hair preparations and after-shaving lotions, have been packaging their products in elaborate gift boxes since the beginning of the war. This was a successful sales tactic, because most of the purchasers of this type of merchandise were made by women for shipment to men in service. Now, the war is over, the men are returning, but over 50 lines of men's toiletries are still packed in feminine styled packages. These are everyday products, which ordinarily are purchased by men. Will men buy packages with feminine appeal?

The reluctance of these and other business men to engage in packaging reconversion is sometimes justified by them on the grounds that we are experiencing a sellers' market. But complacency is always easier to justify than to profit by. An executive attached to the refrigerator division of a large manufacturing corporation recently told the writer that the days of the sellers' market are numbered, and



the number may be lower than is generally assumed. In fact, because of the number of financially solid competitors who have entered the refrigerator field since the start of the war, this individual's organization is proceeding with its present sales plans on the basis of a buyers' market.

New Materials

Wartime developments have provided management with a variety of new materials and new processes both for products and containers. Since the manufacturers of these new materials are tooled for maximum output, and in many cases have considerable surplus stocks on hand, prices are probably as low at present as they will be for some time. Far-sighted executives have an excellent opportunity to select new materials which will prove most satisfactory for their individual products and containers.

Before the war, selection of materials, especially for containers, was in the hands of the supplier, rather than under the control of the manufacturer of the product. It was customary for a manufacturer to place his order for packaging materials with a mill located in his vicinity. This reluctance to go far afield in the search for proper packaging materials resulted in many inefficient containers, which reduced dividend checks to stockholders and increased the price of the product to the consumer.

The war has taught business men something which industrial designers have known for some time, namely, that the primary purpose of a package is to protect its contents from producer to consumer.

The industrial designer, working with management, can help decide upon the proper material, and from it construct a package which will flow through the inter-related phases of distribution with the least possible friction.

One interesting conclusion we may draw from the war is that, whenever an industrial designer demonstrates that there is a need for technological improvement in a package, the scientists and engineers have the required "know-how" to meet the requirements. Thus, when a "non-breathing," self-drying package for machinery, tools, and weapons was needed for overseas shipments, it was quickly developed. Now Method II and hot-

dip continuous coating meet the most exacting requirements.

We may anticipate similar wrappings for many foodstuffs, because such wrappings are needed for more efficient and economical distribution. For foodstuffs needing "breathing film," there are other answers. Other new developments may include non-breakable plastic bottles, and light-weight, interlocking pallets of magnesium or plastics for use in cargo airplanes.

Packaging 'Musts'

The developments of the war period have confirmed the fact that the modern package must meet seven requirements. The modern package must:

1. Have eye appeal to attract attention.
2. Stand head and shoulders above competitive packages.
3. Be practical and economical to manufacture, and easy to pack.
4. Protect the product fully, and dispense it conveniently.
5. Be easy to handle, stack and display.
6. Give immediate identity to the product.
7. Have remembrance value.

To get full value for the effort, time and money expended to achieve these seven packaging "musts," the creators of a new package must be professional in all essentials, and must be without bias as to materials and sources of supply.

Plastic Upholstery

An extensive new line of plastic upholstery for civilian use which, for the first time, will provide designers and manufacturers with upholstery material that is both waterproof and flameproof, was announced by United States Rubber Co. recently. The plastic upholstery, known as Naugahyde, will be made in a wide range of clear decorative colors, two-tone effects, and in a variety of grains.

New Packing Techniques



Excelsior and shredded paper, which contain acids, are "war casualties."



A floating load can be protected by plastics because of new techniques.

By CHARLES L. SAPERSTEIN

General Manager
Glean's Assortments, Inc.
New York

(Formerly Army Air Forces
Packing Control Officer)

MUCH has been written on the deplorable condition in which supplies packed for our fighting forces reached their destination. It is time in the first month of a new year of peace, to switch the spotlight from past faults, and to highlight the improvements in techniques of preparing for shipment developed in World War II.

As an indication of the frequency with which changes in packing and crating occurred, one need only refer to the number of times a given technical specification had to be re-issued. So rapidly was new knowledge in processing, preserving and protective packaging accumulated that a file of printed instructions over six months old was almost useless to the G. I. packer whose work was to be checked for compliance against a later revision.

Government challenges industry. Wartime changes in methods, materials and types of containers

developed in several different ways. Many of these changes resulted because the armed forces, in effect, told industry, "You must find a better way of getting these products to our fronts in safe and usable condition."

Perhaps the outstanding example of government directly charging industry to find an improved packing method is in the fibreboard box category. V-board solid and corrugated fibreboard boxes have played so universal a role that it is difficult to realize that at the beginning of our defense program this material was unknown. The fibreboard industry was requested by government to find some means of overcoming the high ratio of failure which was occurring with ordinary domestic fibreboard containers used in shipping war materiel.

As a solution to the problem given them, the paperboard industry developed a water and moisture resisting fibreboard

which, for certain types of cargo, could be fabricated into shipping containers that would stand up under unusual handling and storage conditions.

Discoveries through research. A considerable number of war-born changes in packing art may be attributed to continuing research fostered both by government and industry. Some idea of the extent of improvements which grew out of continuing research may be secured by comparing the standard joint army-navy packs, as constituted in the current JAN specifications, with the rather general specification in existence at the outbreak of hostilities.

Prior to the war, there was some knowledge of the use of dipping compounds and grease proof papers in the field of corrosion prevention. This simple effort to eliminate damage resulting from deterioration evolved into the Method I Pack, with its variations of compounds and

Correct application of bold, legible "poster" style marking. Solid fibre slotted carton printed from solid brass plates.

Robert Gair Co., Inc.



Will Aid Distribution

types of paper, each proven by constant research and testing. Just before the war, the use of dehydration in preservation, now known as Method II, was beginning. Today, there are five clearly established Methods II Packs, with additional methods combining or modifying the basic five. Entirely developed and classified since the beginning of the war are the several methods of Pack I-A, which adds water-proofing to the barrier; also Method I-B, which employs strippable plastic compound coatings to safeguard parts.

The development and refinement of these methods which will make so definite a contribution to postwar packing and shipping, may be credited to the able research of the staff at the Forest Products Laboratory, Madison, Wis., sponsored by U. S. Department of Commerce.

Technological developments. Some of the new techniques in packing coming out of the war period cannot in all certainty be credited to the demands of our national emergency. I refer to new contributions which may have resulted in any event, through normal developments in such fields as chemistry, plastics, glass, metal and wood pulp. Examples in this category include such advances as the use of aluminum for shipping containers, new laminations of plastic films as well as combinations with metal foils or paper products. Technical developments in glass, leading to the achievement of greater strength with less overall weight, should also be mentioned. Another important example is the improvements which plywood manufacturers were able to introduce in the endurance of grades suitable for shipping containers. The ability of present day plywood to withstand exposure is permitting the use of this material in an increasingly large percentage of general shipping cases.

Many wartime changes in packing methods and materials came about because the armed forces, in effect, told industry, "You must find a better way of getting these products to our fronts in safe and usable condition."

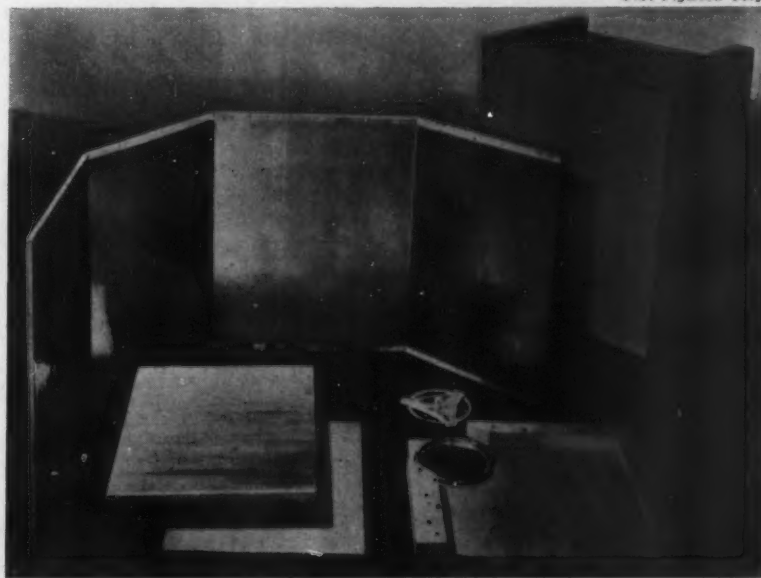
New attention to old techniques. There is scarcely a shipping or cargo handling man concerned with preparation of war materiel for export who did not fall back on perhaps forgotten basic principles of packing in order to bring interior and exterior standards up to more rigid requirements. This means there are still other changes which became generally accepted during the war period, but which were long known to the writers of text books on packing, although followed by only a few idealists.

An instance of a practice which became general under the stress of war needs is that of the case-liner. It is not the use of case-liners as such that is new; it is their use to achieve a definite barrier to water and moisture. The case-liner today is not a mere decorative, cushioning or surface-

saving agent. Postwar distribution inherits a newly created comprehension of need for complete waterproofness. The case-liner is required in order to pack many items and products. There are many prefabricated case-liners on the market. In addition, for those wraps which do not run to frequent uniformity, many techniques have been advanced for quickly fabricating a liner to size from a roll of waterproof paper.

Another practice which gained respect during the war is the employment of wire bands and strapping in proper thickness and tensile strength. The high percentage of loose or broken strapping on our early war shipments quickly proved that for most part, industry was indiscriminate or unlearned in the use of strapping equipment. With only four
(Continued on page 94)

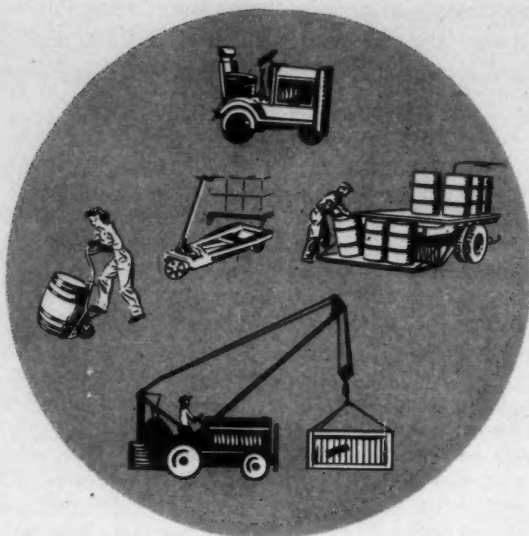
Armormply powder box complete and in sections. Armormply is formed by bonding a sheet of metal to plywood. For the carton below, stainless steel was employed.
U.S. Plywood Corp.



Materials Handling . . .

By MATTHEW W. POTTS

Materials Handling Consultant



AS we face the postwar era, and begin to realize that again we are going to be faced with a common labor shortage, it would be well to survey the potentialities of an industry which is growing up within our midst.

During the war, the army and navy found that in the handling and storing of its enormous quantities of supplies that it was necessary to use mechanical equipment wherever possible. They procured thousands of feet of gravity conveyor, thousands of industrial trailers, thousands of tractors, fork trucks, hundreds of cranes, locomotives, and many other types of materials handling equipment, as well as combat vehicles, etc., which were used in the movement of supplies, but which ordinarily would not be considered as materials handling equipment.

Training Methods

One of the most difficult problems faced by the army and navy was the training of individuals in the proper use and application of materials handling equipment. However, a few individuals who were well-versed in this subject de-

voted their personal time and effort in the government's service, in establishing the principles and text on which methods were based and educational programs developed. This training extended throughout the world, and because of the quick movement of supplies and the coordination and integration of distribution from producer to actual line of combat, many hours of time were saved.

It was possible also by using modern materials handling methods to reduce materially the amount of manpower required for the movement of enormous quantities of supplies. The use of mechanized equipment also made it possible for young boys, old men and women to be employed at various warehouses, reconsignment depots, ports of embarkation and similar points, in the loading and unloading of cars, barges, ships etc.

A greater realization of the possibilities of saving time and space by using mechanical equipment was developed in the war effort. The principles established and the educational programs that resulted should now be of substantial benefit to industry.

We now find that in almost every

industry one of the excuses for a lack of production is the fact that there is a manpower shortage. This particularly reflects itself in the unskilled labor class. Employees do not like to be just truckers and porters. They do not want to manhandle heavy loads, and the campaigns that have been waged in reducing accidents have finally shown that the only way to reduce certain industrial accidents is to eliminate the need of lifting heavy loads, even at infrequent intervals. For this reason either more men are required to lift the same load, or it must be done with mechanical equipment.

Consumer Goods

Industry, in looking forward, will have to consider a higher rate of production than was ever reached in the prewar era, if it is to meet the pent-up demand for consumer's goods. Here will develop the need for a closer coordination of production operations, and these operations will have to be tied together with some form of conveyor in the mass production plants, in order to utilize properly the machine tool production time, the floor space, to supply operators with raw materials, and to carry away the semi-finished and finished products.

The principles which have been developed to integrate distribution in the armed services, have stressed utilization of unit loads and palletized unit loads, both for handling in transit and in storage. These unit loads are larger in the cube area and in weight than would be the case if they were handled in individual packages. The success of this unit load system in the armed services will result in its continuation in industry. Because

A \$100,000,000 Industry

The principles which have been developed to integrate distribution in the armed services, particularly the use of palletized unit loads for handling in transit and in storage, will be extended by industry. Manufacturers of all types of materials handling equipment, who represent a \$100,000,000 industry, have an unexampled opportunity to reduce costs in production and distribution by reducing the number of required handlings.

of larger and heavier loads, modern methods of materials handling must be employed at all points.

Ultimate Cost

If we are to keep the ultimate cost to the consumer down, it will be necessary to reduce every manufacturing cost factor, in production, and also in distribution. One of the quickest ways to reduce these costs is to improve the methods of handling raw materials, as well as semi-finished and finished products, through all steps of production and distribution. A survey of any one operation or production cycle, regardless of the industry, will show that considerable time and money are spent on handling in one form or another. Anything that can be done to reduce the number of handlings will be reflected ultimately in the cost of the goods.

It is at this point that manufacturers of materials handling equipment, who represent a \$100,000,000 industry, have an opportunity to reduce the production and distribution costs of consumer goods, to the benefit of the consumer. To date, however, efforts in this direction have been scattered over a wide area, and there is no coordinated program planned for the benefit of manufacturing and distribution industries as a whole.

When we consider that there is hardly a raw material produced that isn't handled by some form of materials handling equipment (such as wheel barrows, conveyors, industrial railroads, locomotive cranes, mechanical loaders and unloaders, highway tractors and trailers, etc.) we might be inclined to feel that the peak of production

on this type of equipment has been reached. However, a lot of this equipment has been modernized and improved in design, and if proper studies were made, it would be found that much of the existing equipment is inadequate and obsolete. New equipment purchased and installed in these cases would quickly pay for itself, and save considerable time and physical effort.

For instance, in some cases, wheelbarrows could be replaced by portable conveyors. In other instances, portable conveyors could be replaced by larger installations of permanent conveyor systems; or an industrial railroad, because of the fact that the line of travel has been changed, or is more diversified or less fixed, could be replaced by industrial tractor trailer trains.

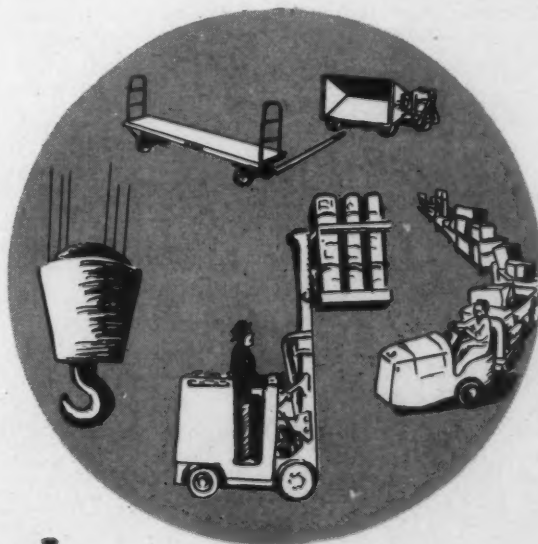
There are still a number of

plants which are using two-wheel hand trucks and four-wheel hand trucks on operations where power-driven equipment would be more efficient and economical. These, in connection with the new methods that are being developed for distribution, create a large market for industrial tractor trailer trains, fork trucks, lift trucks and similar units.

Sales Volume

Recently, in discussing the materials handling industry, the question was asked as to what the potential sales volume of materials handling equipment manufacturers would be for the next two years. Considering the work that has been accomplished, in training men within the armed services, and the pos-

(Continued on page 91)





Air Cargo Possibilities

By JOHN H. FREDERICK
Air Cargo Consultant

An analysis of the recent survey by Air Cargo, Inc., reveals that at all rate levels the apparel industry probably will be the largest user of air transportation, the machinery industry is the second largest potential user, and the motor vehicle industry third. It was revealed also that airline services and equipment have far outdistanced the promotion of air cargo to the shipping public.

THREE years ago several of the larger airlines organized a joint research project to survey air cargo possibilities. Later, all the airlines were given an opportunity to participate in the costs of this research and to share in its results. The group making the study was known as Air Cargo, Inc., and for a while had an independent status but later was merged with the Air Transport Assn. of America. The complete study by Air Cargo, Inc., has not been made available to anyone except the subscribing airlines but enough of its results have been made available in the aviation trade press and in other ways to permit a review at this time.

Field surveys with personal interviews were conducted in some 30 major market areas in the United States for the purpose of studying shipping and distribution practices among selected groups of representative manufacturers,

wholesalers and retailers; as well as certain service and financial organizations. It was hoped that the survey might determine industries in each market area, that would most widely use air cargo as a method for future distribution.

Ton-Mile Rates

A typical industry among the 33 covered by the survey was men's and boys' tailored clothing. It was discovered that if rates were approximately 25c. per ton-mile, air cargo shipments of this industry could be greater than the total tonnage of all commodities carried by air in 1939. Should the air cargo rate be continued at about the average of today, 50c. per ton-mile, the potential for this industry could be about three times its total air shipments of 1939, if the industry were properly sold on this method of transportation.

The survey pointed out that the increased use of air transportation

by this industry would: (1) Permit faster retail fill-ins. (2) Increase variety and spread in dealers' stocks. (3) Accelerate dealer and factory turnover, both equally important. (4) Increase the number of shipments. (5) Decrease the size of individual shipments. An interesting result of these tendencies will be to force stock-carrying by the manufacturer and decrease the importance of the wholesaler in this industry. It is expected that about 80 or 90 percent of the air cargo tonnage that can be developed in this industry will be diverted from railway express.

A study of some 84 leading department stores, in 28 cities in various parts of the country, showed that while in 1939 they received only 1/100 of one percent of their 1,325,000 tons of merchandise by air, a considerable tonnage might be expected to be diverted from other carriers, chiefly railway express and freight forwarders, at rates lower than 14c. per ton-mile.

Another industry studied was motor vehicles. Here, from a study of 10 leading automobile and truck manufacturers, it was discovered that at a rate of 40c. per ton-mile air cargo shipments would be seven times what they were in 1939, and a rate of 20c. per ton-mile would result in a 60-fold increase in tonnage. Should air cargo rates get as low as 13c. per ton-mile the potential tonnage of auto parts shipments is six times the total tonnage (2,925) of all commodities carried by air in 1939. Shipments of replacement parts by motor vehicle manufacturers located in the Detroit area alone, at the 13c. per ton-mile rate, could be three times the total tonnage of all commodities carried by air from all points

(Continued on page 76)

TABLE I
Possible Diversion of Traffic from Railway Express in Certain Industries

At average rate per ton-mile of	Percent Outbound Traffic	Percent Inbound Traffic
RETAIL MERCHANDISING		
\$.47	28	23
.23	40	25
.17	58	43
.18	46	43
MANUFACTURING and WHOLESALING		
\$.47	0.1 to 20	Not shown
.23	0.1 to 50	" "
.17	0.2 to 100	" "
.18	0.5 to 75	" "



Even Toy Trains have taken to the Air!



At Cleveland Municipal Airport, Lawrence W. Cowen, president of Lionel Corp., presents air-borne electric train to Miss Anna Buchanan, director of the Cleveland Fresh Air Camp for Underprivileged Children, as Santa looks on.

WHAT kind of merchandise can be shipped profitably by Airfreight? Well, we're handling furniture and spinach, grapes and penicillin, dresses, yeast, stoves and shoes (among many others) — and toy trains, too!

To satisfy as quickly as possible the long pent-up demand for toy electric trains, the Lionel Corporation, of New York City, has been shipping its trains via American Airlines Airfreight to cities from coast to coast, including Buffalo, Detroit, Cleveland, Chicago, St. Louis, Dallas, Fort Worth, El Paso and Los Angeles. Single shipments of Lionel toy trains have been as large as 5,600 pounds.

This is but one illustration of how shippers in many and varied lines of business are making use of Airfreight's advantages — speed, careful handling, economical packaging and simplified paper work, at low cost. Shippers of merchandise cargo already have demonstrated the profit-filled possibilities for new merchandising inherent in day-in, day-out use of Airfreight.

Our Airfreight sales engineers and research specialists are ready to study your individual situation and your specific problems. They'll show you how Airfreight can work for you. For complete details call or write to Airfreight Division, American Airlines, 100 East 42nd Street, New York 17, N. Y.

AMERICAN AIRLINES *System*

THE NATIONAL AND INTERNATIONAL ROUTE OF THE FLAGSHIPS

Trends in Trucking



BY HAVILAND F. REVES

The long-term trend in truck development is toward more specialized vehicles. Wartime experience has taught the truck operator that the best buy is the truck that will do the job best.

MOST trucks that will be purchased by users during the next year are unlikely to differ much from corresponding prewar types, except in the cases of extremely specialized vehicles. The immediate problem of truck manufacturers is to restore production so that the accumulated demand for new trucks, which is now at an all-time high, can be satisfied. Fulfillment of this objective is essential because of the seriously increased average obsolescence of commercial vehicles of all types throughout the country. Replacements under war conditions have been few, and the experience of virtually every operator points to the need for early replacement. Increased use, whether expressed in terms of load or mileage, or both, has accelerated obsolescence.

Discussion with engineers of leading truck manufacturers indicates that significant changes are expected, in the long run, in the direction of an improved power: weight ratio. Increased payload, with reduced dead weight, will make trucking more profitable, and will decrease distribution costs.

An important objective of automotive designers at present is to increase axle strength to meet the challenge of improved engines and transmissions without increasing axle weight. The changes here will be primarily engineering, rather than metallurgical. Axles

will be made of the familiar steel or malleable iron for some time to come. The quest for decreased weight in this instance is unlikely to lead to the use of the much publicized lighter metals, which do not have the necessary properties to serve in a member of this type. It is significant that no new developments based upon wartime experience are anticipated in the axle field.

Diesel Trucks

Power sources are expected to remain as at present. Diesel-engined trucks are familiar by now, but one important factor is against their widespread use at this time. Wider use of Diesels, aimed at circumventing some of the fuel taxes paid by gasoline-powered trucks, would inevitably lead to heavy taxation on Diesel fuels, since taxing authorities, in self-defense, would adapt their tax structure to changed conditions.

Engineers have considered the possibility of other power plants: gas turbines with high theoretical efficiency, steam, which has long been experimented with in the automotive field, and atomic power, utilization of which is probably too far in the future to be of immediate practical concern.

Legislation may be anticipated in several states to set minimum highway speeds. This, undoubtedly, will have an important effect

upon future truck construction. In order to take advantage of the anticipated legislation, it will be necessary to increase the power of trucks. The view of leading engineers is that this will be done in many instances by the use of an auxiliary power plant, rather than by an over-development of the power rating on a single engine.

It is considered preferable to develop an auxiliary engine which can be cut out, except when actually needed, rather than to place the entire capacity in one plant, in which the total weight of moving parts must be kept in operation at all times, even though only a fraction of total potential power is needed most of the time.

The use of bigger and heavier trucks will be encouraged by minimum speed regulations. Truck designers for years have deplored the overloading of trucks far beyond rated capacity. Overloading is responsible for the snail-like movement of trucks on highway grades, and for their slow acceleration when loaded. The conversion of a rated 1½ ton truck into a carrier of much higher capacity should become a thing of the past if a minimum speed of about 20 m.p.h. is decreed. It is believed that this overloading has been most common in the smaller truck field, despite the occasional glaring examples in the larger truck field. Owners of

(Continued on page 74)

STUDEBAKER TRUCKS HAVE IT!



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and economy!**

CONTROLLING the cost of motor truck transportation poses a serious problem these days to many a businessman. Some expenses obviously cannot be cut. But a lot of economy progress can be made by switching to Studebaker trucks.

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You've heard, of course, how Studebaker truck quality proved itself in wartime service. Nearly 200,000 rugged, heavy-duty Studebaker trucks successfully mastered some of the toughest transport problems in military history—in all parts of the world, in all kinds of weather, over all types of terrain.

And now the advantages of this dependable Stude-

baker truck quality go back into commercial service. In addition to the heavy-duty one-ton Studebaker that is pictured above, half-ton and one-ton pick-up trucks—as well as 1½-ton models in several wheelbases—are soon to be available.

See the nearest Studebaker dealer and see for yourself how much real transportation value Studebaker has packed into these new economy trucks. Each new Studebaker truck adds brilliant new luster to Studebaker's matchless 93-year reputation.

Studebaker

South Bend 27, Indiana, U. S. A.

**PIONEER AND PACEMAKER
IN AUTOMOTIVE PROGRESS**

Book Value VS. Real Value

By FRED MERISH
Special Correspondent

Now is the time to inventory handling and marketing equipment to determine actual value as compared with book value, and to get all phases concerning the reconversion of distribution equipment in clear focus. Replacement and expansion purchases will run high for a number of years. These outlays will begin as soon as equipment is available, so action is advisable early in 1946.

EVERY management should prepare a detailed plan covering handling and marketing equipment purchases and its approximate cost to determine whether the investment can be made from company funds, or whether capital must be borrowed and, if so, how much, or whether outside credit must be obtained, and whether it will be obtainable when needed and from what sources. It is poor policy to wait until you need funds before you go looking for such accommodations.

Now is the time to plan your handling and marketing equipment purchases from all angles. If you need credit assistance, contact your banker or other prospective creditor, show him your financial statements, tell him how much you intend to invest in equipment replacements or expansion and get his reaction now. Concerns that have set aside funds for postwar equipment purchases are in a preferred position because they can put the cash on the line and, more

than likely, will be given preference on shipments. For a time, even after production starts rolling in high, deliveries will be slow, so the sooner you get under the tape with your orders, the better. However, the "early bird" is not likely to get the worm if he practices "slaphappy" purchasing without a well-thought-out plan. In some instances, it may be necessary to determine first how much it is feasible to invest and then cut the cloth to the pattern.

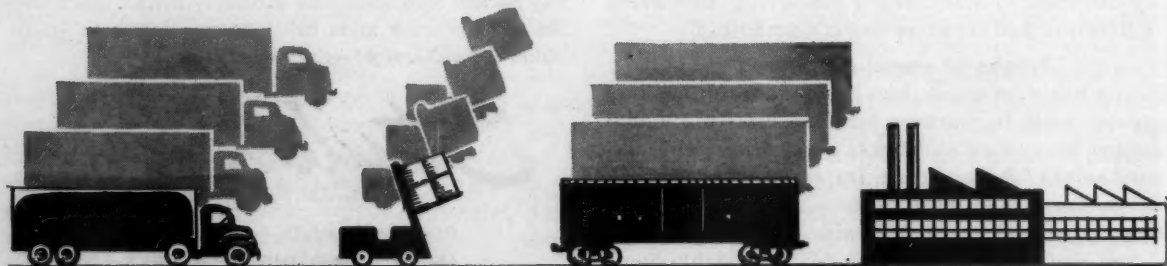
Investments in new handling and marketing equipment entail more than the preparation of a shopping list. The old equipment must be listed in detail and appraised as to its condition. It is wiser to get disinterested outside assistance to make the appraisal. Sometimes the producer of the equipment will aid in this. In many cases, the books or depreciation schedules will detail the history of the equipment but book values today cannot be accepted unless confirmed by appraisals because values have changed during the war years.

Most of the equipment in use today was bought before the war and much of it must be prematurely scrapped within a short time to make room for units of more modern design and operation. This begets a complicated situation that only an appraisal of each unit will clarify.

The book value of a depreciable asset is the original cost, which is recorded at the time of purchase, less the written-down value for depreciation, obsolescence and other contingent factors that reduce value. Book value seldom agrees with actual value and an adjustment is usually made when the depreciation charge-offs are terminated. Inasmuch as most equipment in use today will be replaced as soon as possible, management should compare book value with actual value as shown by an appraisal and record the differences.

In most cases, it will be necessary to write-off a reduction against net worth or surplus. The income tax office will not permit a taxpayer to recover in later years for prior failure to take any depreciation allowances, or for taking allowances inadequate under the known facts of prior years. So, where the book figures do not cover actual depreciation or obsolescence, as shown by an appraisal, management is out of luck and

(Continued on page 58)



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● If we focus an imaginary telescope on the year ahead through the "sights" provided by rail carrier performance in two great wars, we should see a preview picture of the railroad of 1946.

Railroads in Two Wars

FOR the second time in a generation, America's railroads have hauled the load successfully over the rock-strewn right-of-way of a major war.



Freight cars averaged 1,114 ton mi. per day in 1944, against 518 in 1918.

For the second time, the way ahead is an easy grade, except for the sharp curves of reconversion.

Railroad reconversion presents unique problems because, unlike many other industrial organizations, a railroad cannot shut down for retooling. This fact is responsible, to a large degree, for the lack of spectacular changes in railroad equipment. Anything new must work with everything there already.

Nevertheless, a comparison of performance figures for 1918 and 1944 shows that rail progress is steady. If we focus an imaginary telescope on the year ahead through the "sights" provided by the two great wars, these figures should provide us with a preview of the railroad of 1946.

It is well known that the railroads, in 1944, handled nearly twice the number of ton miles of freight carried in 1918. This record of 738 billion revenue ton miles was set with 1/3 fewer locomotives, 1/4 fewer freight cars, and 1/4 fewer employees. In addition, while rail freight movement in the First World War was marked by almost constant congestion, a

By JOEL KEITH

Associate Editor

far greater tonnage was moved smoothly and without delay of consequence in World War II.

Technological improvements were largely responsible for this impressive increase in efficiency. Each freight train, for example, transported an average of 1,138 tons in 1944 compared with 681 tons in 1918. Each freight train in 1944 was made up of an average of 53 cars, compared with 34.4 in 1918. Each serviceable freight car aver-



Average 1944 freight train consisted of 53 cars; 1918 average was 34.4.

aged 1,114 ton mi. per day in 1944, compared with 518 ton mi. per day in 1918.

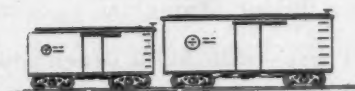
When these figures are translated into terms of 1946 commercial freight, and when the factor of new and better locomotives and freight cars on order is added, the net result indicates that the new year will be one of unparalleled railroad efficiency.

● The railroads still have a war job to finish. While they are doing it, however, they are looking ahead and working toward the improvement in plant and equipment which will make possible the better service of the future.

John J. Pelly, President
Assn. of American Railroads

The railroad of 1918 was a bigger plant, but the railroad of 1946 will be a far better plant. Investment in railroads now is 1/3 greater than in World War I, and much of this additional capital is in the form of improved road and equipment. More men were employed by the railroads in 1918, but present employees have more and better tools to work with. In the First World War, there was an average of \$10,000 of railroad plant for each man employed. Now, each man uses tools in the form of plant and equipment worth \$20,000. In 1946, when some of the new equipment on order is delivered, this average will probably rise.

Although the average freight car of today carries 22 percent more payload than its counterpart of 1918, the new year should be marked with considerable advances in this direction. The manufacturers of lighter metals, such as aluminum and magnesium, are tooled for maximum production, and they regard the railroads as



Today's freight cars can carry 22 percent more payload than those of 1918.

natural markets for their products.

The use of lighter metals in the construction of freight cars, it is claimed, both will increase the capacity of the cars and will make it possible for a given unit of motive power to pull more cars.

The tractive, or pulling power of the average locomotive is 50
(Continued on page 64)

Heavy Freight Under Ground

PART 2

THE first step in building a pipeline is to make a complete aerial survey of the area to be served. From this aerial map the best route is determined. It is desirable, as much as is possible, to avoid mountains, deep forests, rocky ground and other natural obstacles to building.

When an approximate route has been chosen, surveyors lay out the exact path of the line, and a right of way is purchased. In the case of the Plantation line, this right of way was 30 ft. wide.

Crews of men move in to fell trees or to blast through rocky obstructions. This clearing process enables construction crews to build the equivalent of a good secondary highway along the entire route of the pipeline. Not only does the roadway provide working room, but it provides a path over which tractors, trucks and bulldozers are driven from section to section as pipe construction progresses.

If the land is relatively soft, a trench is dug by a specially designed ditching machine which can, in one minute, dig 15 ft. of ditch four feet wide and three feet deep. The ditcher piles the dirt neatly to one side as the trench is dug.

In very dense or rocky earth a trench hoe replaces the ditch digger. The trench hoe serves the same purpose as the ditcher but does the job differently. Essentially, a trench hoe is a steam shovel, but instead of scooping the dirt away from the operator, the trench hoe digs toward the operator.

When the path of the pipe must pass through solid rock, the construction crew resorts to blasting. Pipeline blasting crews do not at-

● In our mechanized civilization, an important method of moving commodities from producer to consumer is the pipeline, which carries heavy freight under ground.

By W. K. BORLAND

Pipeline Engineer
Standard Oil Development Co.

tempt to remove an entire hillside. They set the charge to excavate only a trench large enough for the pipe. After the blast, it is necessary only to remove the loose rock.

Following preparation of the trench, pipe is brought up, usually in 40 ft. lengths, and is placed on wooden supports alongside the trench. Electric welding of the pipe is performed in two steps. The first man in the welding team, known as a "tacker," puts the sections of pipe together with a series of tack welds after the pipe has been beveled at the ends. The tack-er is followed by a welder who completes the weld which is normally 10 percent stronger than the pipe itself.

Tacking and welding are two separate operations performed by two separate men, the welder being the more experienced of the two.



A "go-devil", or line scraper. This tool is used in cleaning pipelines.

Each completed weld is stenciled with the welder's personal mark. The future performance of the weld is his particular responsibility. If a weld becomes leaky it must be dug up for repair, and so represents a black mark against the welder who performed the job.

After several sections of pipe have been joined, they are covered with a protective coating, the na-

Cranfield-Gibson's Landing Pipe Line, Natchez, Miss. After the "brush gang" and "powder man" are through, bulldozers shove the cut trees off the right-of-way.



ture of which is determined by the chemical characteristics of the soil in which the pipe is to be buried. Strongly acid or alkaline soil would corrode bare pipe, so it is necessary to cover it with special paints, and felt or tarpaper. The felt and tarpaper may be coated with asphalt.

When the course of the pipeline calls for a section of curved pipe, the usual procedure calls for two "boomcats," tractors with booms attached, to bend the pipe sold according to a curve decided on by the practiced eye of the construction foreman.

The covered pipe is then lowered into the ditch by a boomcat, and the ditch is filled in with dirt. This lowering must be done just before dawn, at the coolest time of day. When the pipe is put together, it is longer than the ditch for which it is intended. In fact, a pipeline does not assume its normal length until it is buried and oil is flowing through it.

At intervals during the construction of a pipeline it is necessary to clean the inside of the line. This is done with a "go devil," a series of disks containing steel knives and gear-like wheels. The go devil is driven through the pipe by compressed air, and as it rotates, it removes debris collected in the pipe. The same method is used to clean the pipe during periods of operation.

Separate Crews

Where a pipeline travels under farmland, it is usual for the farmer to cultivate over the right-of-way. Some years ago, a pipeline route crossed a fairway on a country club golf course. Both the construction crews and the club members are pleased to report that it is impossible to tell now where the pipe trench was dug.

In the construction of a pipeline, several crews called "spreads" will work on progressive sections at the same time. Each "spread" is assigned a particular area. In that area, the "spread" will clear the right-of-way, dig the ditch, deliver the sections of pipe alongside the ditch, set up the pipe for welding, weld the sections, apply the protective coating, lower the pipe into the ditch and cover it with dirt.



A linewalker uses double cable wires to cross a river on inspection tour.

When a pipeline crosses a river (the Plantation line crosses 14 of various sizes) essentially the same construction procedure is followed, except that the trench must be blasted in the river bottom. Enough pipe is put together to span the river, one end is placed on a barge and towed across, and construction then proceeds on the other side.

Pumping stations are built on a long distance pipeline at various points determined by the size of the pipe, the degree of grades encountered in the terrain, and the products the line is to carry. On level ground, the Plantation line pumping stations are 40 mi. apart. In addition to providing the energy necessary to keep the contents of the pipe moving at a regular rate, each of these stations acts in much the same capacity as a dispatcher's office on a railroad.

Common carrier pipelines operate on a closely controlled dispatch system. Shipments, called "tenders," are scheduled six or more weeks in advance, and may be delivered to the head of the line at any time prior to dispatching time. There the tenders are stored in tanks until the day and hour at which they are to be started through the line.

The consignee, awaiting delivery of the tender at the end of the line, is advised when the shipment enters the line and when he may expect it to arrive at the destination. When the tender reaches its desti-

nation it is delivered into tanks provided by the consignee.

A recording gravitometer keeps a continuous and accurate check on the specific gravity of the shipment while it is going through the line. Since a change in specific gravity means a change in the quality of the product, a constant gravity means the consignee is receiving the tender just as it was shipped.

A constant record of the specific gravity of the line's contents also enables the operator to separate with ease various tenders as they arrive at their destination. In practice, tenders go through the line one after the other. Lubricating oil may be pumped into the line immediately after a load of gasoline, and the oil may be followed by kerosene or domestic fuel or some other product. Very little material is lost by contamination. Small amounts that mix are pumped into a special "slop" tank at the end of the line.

The operator knows, of course, exactly what products are going through the line, and he knows exactly at what point in the line they are at a specific time. By knowing the specific gravity of various oil products, the pipeline operator need only refer to his gravitometer to know when a new tender is arriving at his station to be delivered. He may then divert the tender into the tanks provided for it.

Pressure Gauges

Maintenance of pipelines after they are in service usually proceeds in two directions. Each pumping station is equipped with pressure and temperature gauges which notify the operator of any trouble in the line. Any unexpected rise in pressure may mean that the line has become stopped up. Likewise, an unexpected drop in pressure indicates that the line may have developed a leak.

When an operator notices some difficulty at his station he can compare notes with adjacent stations to determine approximately where the trouble is occurring. The actual point of an accident is found by the men who patrol the pipeline. These pipeline "walkers," on foot or on horseback, continually inspect the line for leaks.

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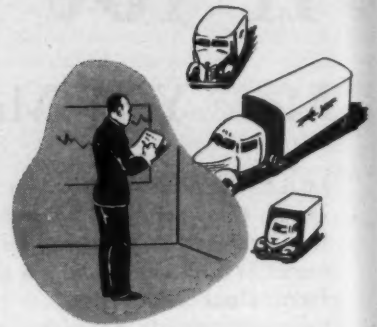
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A Modern Traffic Department

Part 3 — The Transportation Organization

System is the secret of success in the operation of any large fleet of trucks. If proper supervision is maintained, and if proper records are kept, many thousands of dollars can be saved by motor vehicle operators.

By W. B. JESTER



A NATIONAL corporation, such as the one we have been discussing in this series of articles, would require approximately 120 pieces of rolling equipment for the distribution of its products from each branch. How large a territory each branch covers with its own trucks, and what percentage of traffic should be given to common carriers can be determined after a careful survey which takes into consideration the freight rate structure, highway conditions, and other factors pertaining to the area.

Superintendent of motor transportation. This executive should have supervision over all rolling equipment, and should report to the branch traffic manager. He should employ all mechanics, chauffeurs, and other help necessary for the operation of his department. He should not be overloaded with detail work, but should be free to devote a large part of his time to actual supervision of trucks on the highway.

Safety meetings should be held quarterly, at least. A prominent speaker should address all employees of the transportation department. These meetings should be made attractive for the employees, and when advisable, the families of the men should be invited. Many large firms give dinners to their drivers at stated intervals. Medals and cash awards are often given to drivers for long periods of service without an accident.

It is the duty of the superintendent of motor transportation to investigate all accidents and determine the liability for each.

Many firms carry their own property damage liability insurance. This is recommended, but it is not advisable for a private firm to carry its own personal injury liability insurance, since the personal injury loss in any accident may run into thousands of dollars.

The property insurance premium paid by operators of large fleets of rolling equipment is based on the accident experience of the operator. This is satisfactory if the insurance company will base the premium on the actual dollars and cents paid out in settlement of accidents experienced by the firm; but many insurance companies base the premiums on an arbitrary amount set up to cover the accident immediately after it is reported. For instance, in one case, a large truck backed into the corner of a house, and knocked off a few shingles. The insurance company

set up \$250 in their records to cover the loss, and charged this amount against the accident experience of the firm involved. The claim actually was settled for \$2.50. Under these conditions, it is much cheaper for a large corporation to carry its own property damage liability insurance.

Garage manager. It is the duty of this man to supervise the work of all garage mechanics, and to assign a mechanic to each job. The time which each mechanic requires to repair a truck should be charged to that truck, and parts used on each truck should be charged similarly. The garage manager should see that each truck is in good condition before it leaves the garage. Drivers should be encouraged to submit a report to the garage manager on the condition and performance of each truck upon the conclusion of a trip. If all trucks are in good mechanical condition when they leave the garage, and if the drivers have had the proper safety training, accidents will be held to a minimum. Interstate Commerce Commission regulations require that each firm keep on record health certificates for all drivers, and that each driver be required to keep a log showing the number of hours worked.

Recordographs should be installed in each truck. The tapes of these instruments should be studied carefully by the garage manager. If a recorder is properly

(Continued on page 64)

EDITOR'S NOTE: This is the third and concluding article of a series on traffic management by W. B. Jester. The first article described the general office of a modern traffic department, and the second analyzed the problems of branch plant traffic organization.

Mr. Jester has had many years of practical experience in the field of traffic management. He was general traffic manager for The D. Pender Grocery Co. (now Colonial Stores) Norfolk, Va., for 20 years and for six years was executive secretary and traffic manager of the Virginia-Carolina Peanut Council, with general offices at Atlanta, Ga. He is at present branch traffic manager at Dallas, Tex., for a nationally known beverage manufacturer.



The views of the author do not necessarily reflect the views of his company.

Integrating and Coordinating Transportation in Business

Better understanding on the part of management of the function of transportation in distribution will result in multifarious business benefits.

By CHARLES A. PASCARELLA

General Traffic Manager
Francis H. Leggett & Co.

ADDITIONAL traffic functions that can be integrated with other business activities to make possible more efficient and economical distribution may be summarized briefly as follows:

Coordination with the Sales Department. The traffic department furnishes freight rates to the sales department from the point of distribution to the point of sale. This information usually is compiled after a survey is conducted of relative costs and services offered by the various methods of transportation. Rate and service information is reduced to the simplest form to save the time of salesmen. The method of arriving at the transportation cost depends upon the type of business, and the form used in submitting prices. A rate chart used on machinery, where the sale may embrace one unit, is naturally different than that used when the selling price is submitted on a package or other unit basis. The aim should be to insure accuracy and ease in adding the transportation charges to the price in order to protect the desired margin of profit.

Transportation service is something about which the sales department is invariably sensitive, and rightly so. However, sometimes the salesman, in his anxiety to "get the order," makes certain promises regarding delivery service that are impossible of execution, considering prevailing transportation conditions. Sometimes this is due to inadequate transportation arrangements on the part of the organization.

When a customer places an order, usually, his first question is, "When am I going to get it?"

The fact that the order may be delayed in factory, office or credit department does not interest the customer. Consequently, from the customer's viewpoint, all steps, from the time he gives an order until he receives it, affect delivery service. Anything that delays prompt handling of an order within the organization must receive constructive consideration from the transportation man. Therefore, he must have a thorough knowledge of all departments that handle the order, and he should be in a position to offer constructive suggestions from time to time with regard not only to the flow of merchandise from receiving to shipping departments, but also to the flow of paper work incidental to it.

In many lines of business, the maintenance of a truck fleet to complete the delivery system is an integral part of transportation operations. This is a subject that has failed to receive the studied consideration it deserves.

Where a transportation specialist is in control, efficient and economical operation invariably is assured. However, where this

phase of the business is handled by other than a transportation man, fleet operation costs are high, and operation inefficient.

In many industries, high delivery costs are the result of competitive conditions. This was brought forcibly to the writer's attention when, as a member of the District Shippers' Advisory Committee of the Office of Defense Transportation, he experienced considerable difficulty in promulgating joint action plans for the bakery industry. Prior to the war, this industry was making deliveries four times a day. Because of ODT limitation of truck deliveries, a number of bakers bought horse-drawn vehicles in order to make extra deliveries. This had a disrupting influence. The large companies did comply with the ODT regulations because they reduced distribution costs. The smaller companies, which could not stand the loss in business to competitors offering the extra deliveries, were very much upset. Efforts to persuade them to get together seemed almost futile until near the end of the war.

It is safe to assume that the high distribution costs within that industry have been restored with the termination of the war, and the only justification for it is that "John Jones is offering four deliveries a day and I have to do the same thing to retain my customers." These delivery practices help to increase the cost of distribution.

In cases where the point of manufacture is quite a distance from the consuming market, the

(Continued on page 60)

In addition to his duties as general traffic manager for one of the largest wholesalers of food products in the country, Mr. Pascarella is transportation consultant to the National-American Wholesale Grocers' Assn., member of the shippers' advisory committee of ODT, industry representative on the control board of OPA in the New York region, and member of the motor carrier employers' joint wage scale committee of New York.

Book Value vs. Real Value

(Continued from page 50)

takes it on the chin for the tax loss. In addition, management has lost on operations too, because by short-changing itself on depreciation, it did not include an ample amount for this expense in its costs or selling prices. It is wise to keep detailed depreciation schedules on each unit to make sure that depreciation is reported accurately on the tax return, and so that there is a clean-cut record of what is being charged for wear, tear and obsolescence.

Some managements can save substantial sums by planning equipment purchases now. It may be possible to take a deduction on the tax return for forced obsolescence, which is the result of economic distortions of one kind or another, such as we are experiencing now. Probably at no time in our history did forced obsolescence loom higher than now, when new equipment, much of it revolutionary in design, will come to market, forcing the premature scrapping of existing units, equipment that might have functioned in normal times for years longer because mechanically it is in good condition. But speedier units soon to be marketed, units, in some cases, utilizing radical changes in opera-

tion, hence, more efficient and economical, have shortened the profitable life-span of old equipment.

If it can be shown that your handling or marketing equipment is a victim of forced obsolescence, you may get a tax reduction for it and now is the time to analyze all factors touching this problem so that you can present the facts intelligently. Any write-offs in excess of the depreciation charge-offs to date are chargeable against net worth and this may change your financial status considerably. Now is the time to determine this figure before you ask for credit accommodations to finance modern-

Repacking

OBVIOUSLY, no commercial carrier in his right mind intends to enter the business of repacking his shippers' goods after they have been received. You may question, therefore, how the study of packing can assist a carrier, since after all the carrier is paid for every pound he carries. It is axiomatic, however, that if shippers are shown how to save money in moving their freight by air, how, in fact, to approach more nearly the transportation costs of other mediums, the business from that shipper may be expected to increase in direct proportion to the saving offer.—Lt. Col. D. W. Long, Chief, Procedures Division, at National Air Transport meeting, SAE.

ization and expansion. Write-downs of depreciable assets at this time may be so heavy that your credit standing is considerably impaired. If so, you ought to get the bad news as soon as possible.

Before the war, trade-in allowances were a good "cushion" against which to offset differences between the book value of a depreciable asset and actual value as shown by an appraisal. Many depreciation schedules in existence today were set with an eye to a substantial trade-in allowance when

the equipment was to be replaced. But much equipment has been worn to a frazzle during the war through lack of proper upkeep caused by shortages of manpower and materials, and through production speed-up. It has grown old faster than estimated, or it will be made prematurely obsolete by new units.

To facilitate an inventory of handling and marketing equipment, a reconversion chart is suggested, but this chart is not complete without a budget. Many concerns already have made studies covering their lines. A wise management will do likewise and gear its buying of handling and marketing equipment to the results of these studies, fixing the type and number of handling and marketing units needed to handle demand as reflected by business probabilities.

Synchronizing budgeted volume and equipment in this manner will help cut distribution cost, which is on the postwar agenda of every wise businessman.

It is reported that Henry Ford once said that any man can succeed if he visions the road to the goal clearly, the obstacles he must overcome and the opportunities that may present themselves. In this way, management is not waylaid by unexpected hazards nor unprepared for opportunities when they materialize. We are now at the cross-roads of American destiny. A businessman cannot be a soothsayer but he can plan his work and work his plan more effectively than he did in prewar days, otherwise, he will be unprepared to solve the many problems that will come to pass during the next few hectic years.

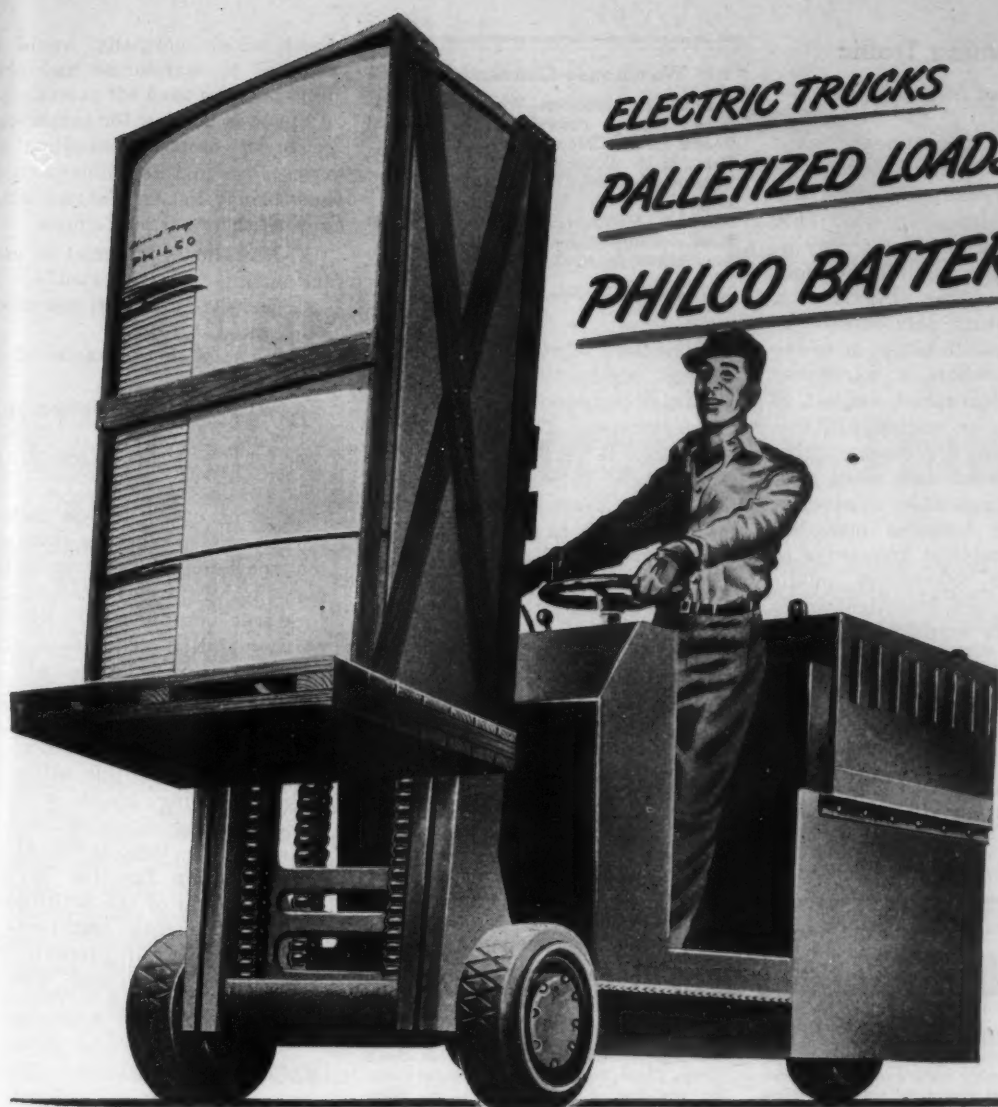
To systematize an inventory of handling and marketing equipment, it is advisable to prepare a reconversion chart with headings to include the following: unit; date purchased; cost; book value; tax allowance; salvage value; trade-in allowance; repairs needed; appraisal value; cost of replacement; forced obsolescence; charge to net worth; date disposed of; date new unit purchased.

However, the compilation of such a reconversion chart is of little use unless you act upon it promptly.

Fork Trucks

ONE of the outstanding disadvantages of the fork truck is that it is of no use on soft ground or in the snow, and we have been working with fork truck manufacturers to provide us with a lift of the 4000 lb. capacity, which is the same as the one we are now using, but instead of wheels, we suggest that the trucks be equipped with rubber cleat type treads similar to those used on army half tracks. This would permit the trucks to be used on soft ground and snow, would improve their riding quality and add to the stability of the fork when used as a lift. — M. B. Crawford, Chief Equipment Engineer, United Air Lines, at National Air Transport meeting, SAE.

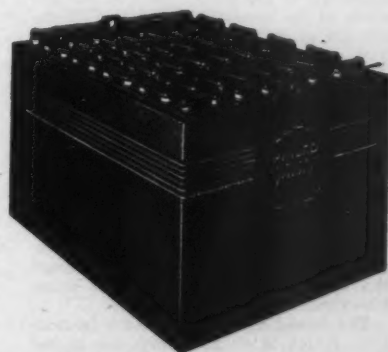
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Philco Corporation, Storage Battery Division, Trenton 7, New Jersey



PHILCO FOR 50 YEARS A LEADER IN
INDUSTRIAL STORAGE BATTERY DEVELOPMENT

Integrating Traffic

(Continued from page 57)

transportation department makes warehousing arrangements to keep stock readily available for immediate shipping needs. This saves time and makes economy in transportation possible. Orders may be sent either directly to a warehouse which acts in the capacity of a branch house, or to the home office, where a warehouse release is telegraphed, subject to confirmation, or mailed. In this manner, sales are made, which otherwise would have been difficult, if not impossible, to execute. The average business man has very little practical knowledge of the services offered by public warehouses. An investigation of their services would be a revelation.

Coordination with the Finance Department. The checking and payment of freight bills is one of the routine functions of the traffic department. The manner in which it is accomplished concerns the finance department, as does

Warehouse Conventions

Feb. 20-22 American Warehousemen's Assn., annual convention, Edgewater Beach Hotel, Chicago.

Feb. 25-28 National Furniture Warehousemen's Assn. annual convention, Edgewater Beach Hotel, Chicago.

Mar. 4-7 Mayflower Warehousemen's Assn. annual convention, Grove Park Inn, Asheville, N. C.

the handling of negotiable bills of lading, surety bonds, and other financial transactions of the traffic department. These include the payment of C.O.D. shipments; and, where shipments are made on a sight-draft basis, and payment of draft is delayed, tracing the shipment and arranging with the customer to pay the draft.

Many other transportation economies may be effected in receiving, warehousing and shipping operations. The scheduling of inbound merchandise so that the receiving department is not unduly congested is of paramount importance. Congestion in the receiving department affects warehouse and shipping operations, since equip-

ment which normally would be devoted to warehouse and shipping must be used for receiving.

Space is lacking for proper coverage of material handling devices; but in this connection, we may briefly list the factors which govern their use, as follows.

1. How much material is moving during a given period?
2. To what uses will equipment be devoted?
3. What is the character of the merchandise?
4. What type of building is involved?
5. What are the needs of the business?

In some cases, pallets may be the answer; in others, a chute system, portable elevator or tiering machine. In other instances, a fork truck or pneumatic lift may be the solution. The use of these units of transportation will increase the efficiency of the plant. Business is devoting more and more attention to this subject.

The purpose of this series has been to bring about a better understanding on the part of business of the importance of the transportation function in management; and of the multitude of business benefits transportation can accomplish if properly integrated and coordinated with the rest of the business.

Traffic Clubs Form Foundation

A CONCERTED plan on the part of 40,000 men in transportation to make the country aware of the importance of expert technical traffic service was launched in Chicago recently with the incorporation of the Associated Traffic Clubs Foundation, a non-profit organization formed to carry on public relations work.

The Associated Traffic Clubs of America, sponsoring the new foundation, is made up of 130 traffic clubs in various cities of the country, with a total membership of approximately 40,000 industrial and transportation traffic men.

Objects of the new corporation are stated as the "development of public appreciation of the value, responsibility and integrity of traffic administration in directing the assembly and distribution of goods and the carriage of passengers, and the traffic man's responsibility to the welfare of industry (including agriculture, mining, manufacture and other branches of commerce), carriers and the public through the efficient use of all types of transportation."

The board of directors of the foundation, which is charged with the collection and expenditure of funds in a continuing public relations campaign, includes 11 of the nation's foremost industrial traffic managers. Board members are:

Charles W. Braden, general traffic manager, National Distillers Products Corp., New York; A. H. Schwietert, traffic director, Chicago Assn. of Commerce; John B. Keeler, assistant general traffic manager, Koppers Co., Pittsburgh, Pa.; Alonzo Bennett, vice president, Federal Compress and Warehouse Co., Memphis, Tenn.; N. J. Brennan, director of transportation, Chrysler Corp., Detroit; W. O. Narry, traffic manager, Richfield Oil Corp., Los Angeles; M. M. Emmert, director of traffic, Coca-Cola Co., Atlanta, Ga.; George H. Shafer, general traffic manager, Weyerhaeuser Sales Co., St. Paul, Minn.; Joseph P. Gudger, traffic manager, Gulf Companies, Houston, Tex.; F. A. Doeber, traffic manager, Citizens Gas and Coke Utility, Indianapolis; and T. C. Burwell, vice president, A. E. Staley Mfg. Co., Decatur, Ill.

At the first meeting of the board of directors, Mr. Doeber was elected president of the foundation. He is also president of the Associated Traffic Clubs of America. R. A. Ellison, manager, traffic department, Cincinnati Chamber of Commerce, was elected secretary, and Mr. Burwell, treasurer.

Organization of the foundation is expected to be completed shortly with the selection of a board of trustees, chairman, a finance committee, and a production committee.

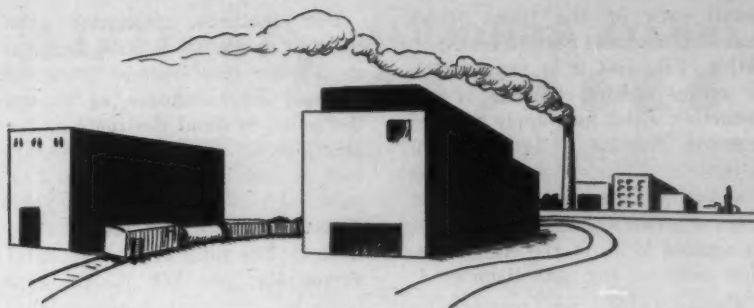
ICC Postpones Class Rate Change

The Interstate Commerce Commission has postponed indefinitely the effective date of the new railroad freight rates provided in its equalization order of May 15, 1945. (Class Rate Case, ICC No. 28310, Consolidated Freight Classification.)

The new rates, scheduled to go into effect Jan. 1, after two previous postponements, provided a 10 percent increase in class rates for the northeastern section of the country and a 10 percent decrease elsewhere except in the Far West.

Nine northeastern states have been granted a temporary injunction by a federal court at Utica, N. Y.

Only a small portion of volume freight moves under class rates, but traffic authorities consider the ICC decision as revolutionary, and much opposition has developed.



By HENRY G. ELWELL
Traffic Consultant

A MANUFACTURER has to find a market in order to dispose of his product. Having found the market he must persuade consumers (users) to buy. Unless sales are made there will be no distribution of the product. But without some form of transportation distribution cannot be accomplished. In other words, transportation is indispensable in the moving of a product to market. Because of this requirement, costs of transportation are created. Commonplace statements? Yes, but they call attention to the fact that costs of transportation are important factors which should not be neglected.

Nevertheless, management, as a whole, gives very little thought to transportation costs. Management is heedful of costs pertaining to production, to selling, and to purchasing of raw materials, but generally fails to give any particular attention to costs which are brought about due to movement. Note the following quoted words as an extreme example:

"There is no use for manufacturers to try to reduce distribution costs while the cost of distribution of retailers keeps climbing." Now we ask you, is that not a silly explanation? Yet, actually, we heard one manufacturer give that excuse as his reason for not having made a study looking toward lowering and controlling his cost of transportation which, as was pointed out to him, is a part of cost of distribution.

It is true that expanded services to customers, plus quick changes in styles and fashions, tend to swell the cost of distribution of retailers. And, it is not to be expected that any radical changes

Storage-in-Transit

Transportation charges constitute a large part of the cost of distribution. In many concerns, transportation amounts to as much as 25 percent of the total cost of doing business. Use of the storage-in-transit privilege granted by railroads to shippers and consignees is one of many ways that transportation costs can be controlled.

will be made which will drop the level of services provided consumers by retailers.

Then, too, in the field of retailing there may be more self-service stores. Due to the probable expansion of this type of shop there undoubtedly will be many changes in packaging, especially for eye-appeal, cleanliness in handling, etc. It is predicted that frozen foods (including partly precooked meals) will be more widely used in which case special refrigeration will be required beyond that previously utilized. Here we merely touch on the possibilities for greater and more extensive services to consumers which will mean increased costs despite the term "self-service." If, in addition, manufacturers, as a group, do nothing to control their own distribution costs then the eventual outcome will be higher and higher costs for retailers. They in turn will be compelled to raise their prices on goods sold to consumers resulting in advances in the overall cost of distribution, with partial stagnation of business as the final stage.

Therefore, it is essential that manufacturers find ways to decrease their portion of the total cost of distribution. One approach by each unit of industry should be

aimed at reducing costs of transportation. There are few, if any, manufacturing establishments in the entire nation where some means cannot be found to lower such costs. Every manufacturer ought to make a study looking to the lessening of his own costs of transportation. Too frequently these costs are ignored, yet they constitute a large part of the cost of distribution. In fact, in many concerns it has been found that the entire cost of transportation amounts to as much as 25 percent of the total cost of doing business. Any single factor of cost which bulks so large when segregated surely deserves careful attention by management.

It is not a difficult task to determine the elements entering into the costs of transportation, each of which should be isolated prior to disbursing to major accounts. As a broadside stipulation: all costs pertaining to the receipt of materials are allocated to production; the costs relating to finished products shipped are apportioned to a company's distribution. Or to put it another way; receiving for production, shipping for distribution.

It is impossible in an article of this length to explain clearly in

detail each of the items which make up the total cost of transportation. Likewise it is not possible to outline specific channels of cost reduction which may apply to every concern. However, it is practicable to discuss a single probability as the basis for suggesting the numerous other avenues of reduction as applied to all of the transportation costs of any establishment.

Consequently, we propose to take up herein just one angle, namely, the potentialities existing in the use of the storage-in-transit-privilege granted by railroads to shippers and consignees to which brief reference was made in a previous article. (See DISTRIBUTION AGE, Oct. 1945, p. 76).

A manufacturer may find it necessary to maintain abnormally high inventories of raw material, or he may not have sufficient storage space at his plant to take care of normal requirements. The manufacturer thus finds it advisable to have such material shipped in carloads from source of supply to a warehouse located intermediate to his plant from where it is later reshipped to his place of production.

Under this procedure two separate movements of transportation take place: (1) from source of supply to warehouse, and (2) from warehouse to plant, instead of only one if the material were forwarded direct from point of origin to final destination. Also, with this plan, storage charges accrue, but it is possible they will be no higher than the total cost for additional space and maintenance at point of production, i.e., the manufacturer's plant.

Under ordinary circumstances storing material as above described would entail two separate freight charges which added together would be considerably in excess of the charge for a single transportation movement. But by taking advantage of the storage-in-transit-privilege it is probable that a manufacturer could use the facilities of an outside warehouse without appreciably increasing the transportation cost of the material. In fact, insofar as the transportation charge is concerned the cost might be less.

For instance, designate the point of origin of the raw material as A; the intermediate place of storage, the warehouse, as B; and the point of final destination, the plant, as C. Assume that the carload freight rate on a given raw material is 39c. per 100 lb. from A to B, and 21c. per 100 lb. from B to C. The total of the two rates makes 60c. per 100 lb. On that basis we can further assume that the through rate from A to C, without stopping for storage at B, will be 44c. per 100 lb.

With Transit Privilege

Shipped From	Freight Rate	Freight Charge
A to B	39c.	\$234.00
B to C	5c.	30.00
	44c.	\$264.00
Transit charge 2½c.		16.50
Total charges		\$280.50

Without Transit Privilege

Shipped From	Freight Rate	Freight Charge
A to B	39c.	\$234.00
B to C	21c.	126.00
Total charges		\$360.00

Summary

Without privilege	\$360.00
With privilege	280.50
Saving	\$ 79.50

From the figures listed above it is noted that for every 60,000 lb. of lumber shipped from original source of supply, A, to place of storage, B, and thence reshipped to final destination, C, the saving in freight charges with the storage-in-transit-privilege amounts to \$79.50 or 13-1/4c. per 100 lb.

With the storage-in-transit-privilege the manufacturer would pay 39c. per 100 lb. from A to B, but only 5c. per 100 lb. from B to C when reshipping, plus a transit charge of about 2-3/4c. per 100 lb. which in most cases is the prevailing storage-in-transit charge. In other words, with the transit privilege, the manufacturer would pay the same total freight rate on the movement from A to B to C as he would pay if he shipped direct from A to C, with the exception

that he would have the slight extra charge previously mentioned.

In the foregoing the example is given to indicate one means by which a manufacturer can develop a study looking toward control of costs of transportation. But, there are other ways by which the storage-in-transit-privilege may be applied.

Take a dealer in lumber, one who maintains a large yard with extensive storage accommodations. He can have lumber shipped by railroad from the original source of supply to his yard where it can be stored. Then by using the storage transit privilege he can reship by railroad to customers located at more distant points. To illustrate, let us use the same carload freight rates as already listed. For the purpose of a calculation we can estimate 60,000 lb. as the weight of each carload of lumber. The rates used are in cents per hundred pounds. Also, as in the preceding, A, B, and C indicate the points of origin, storage, and final destination.

There are sundry materials such as pig copper, wheat, wool, etc., to which transit privileges can be applied for refining, milling, storage, and so on. The various kinds of commodities and types of transit privileges constitute too lengthy a list to incorporate here. But the examples given point to the possibilities of manufacturers and others drastically reducing their costs of transportation, provided they will awaken to the importance of such costs in relation to distribution in its broadest sense.

Always in Debt

The letter "E" is said to be the most unfortunate letter in the alphabet, because it is always out of cash, forever in debt, never out of danger, and in hell all the time. All of which is true. Still, it is never in war, always in peace, and always in something to eat. It is commencement of ease, and the end of trouble. Without it there would be no life, no heaven. It is the center of honesty and is always in love. It is the beginning of encouragement and endeavor, and the end of failure. (SAAMC)

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Protects lifetime-lubricated bearings

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Prevents caster rocking

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No cotter pin necessary

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ELASTIC STOP NUT
No cotter pin necessary

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Railroads in Two Wars

(Continued from page 52)

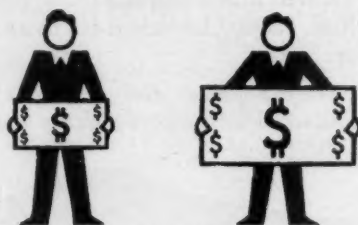
percent greater at present than in 1918. Steam turbine locomotives, which will be introduced by some railroads in 1946, promise still greater power and sustained speed.

Recognition of the fact that materials handling and transportation are the inseparable twins of distribution is responsible, to a great degree, for the record of the average freight train in 1944, which out-performed the average freight train of World War I by 122 percent. If shippers and railroad men take full advantage of wartime lessons, the freight train of 1946 should be able to contribute even more service per hour.

More Efficiency

As they enter the new year, the railroads carry about 70 percent of the nation's freight. They face a far more difficult competitive situation today than in 1918, because of technological developments in the airplane and motor

truck, and the construction and proposed construction of inland waterways and pipelines. However, if historical precedent is any guide, the only certain result of the competitive struggle between



Value of railroad "tools" per man was \$10,000 in 1918. Now, it is \$20,000.

Chart courtesy Assn. of American Railroads

the railroads and the other carriers will be more efficient and more economical transportation of all types for the American business man.

The Freight Car Situation

TRANSPORTATION requirements throughout the United States continue on a relatively high level, especially with respect to box, hopper, refrigerator and stock cars. Despite some temporary disruptions, the reconversion of American industry appears to be well under way, according to a report released recently by Warren C. Kendall, chairman, car service division, Assn. of American Railroads.

The demand for box cars continues to be heavy. This is especially true with respect to higher grade cars and there are some deficiencies in the supply of this class of equipment, especially on western roads.

Because of unsettled conditions in the automobile industry, production has been hampered, and there has been no difficulty in furnishing an adequate supply of auto cars.

There is a heavy demand both for single and double deck stock cars, the latter type being used principally for the loading of hogs. Up to the present time, there has been no serious difficulty experienced in meeting current requirements.

Demand for refrigerator cars continued to increase during December, and will remain at an increasingly high level during the next two or three months. The current loadings of commodities requiring refrigerator car protection are running about 15% ahead of the corresponding period of last year.

Coal car supply has been tight, with some deficiencies, reflecting the need for the continued close cooperation of shippers, receivers and carriers in the prompt release and handling both of loaded and empty cars.

Returning war materials continue to arrive in volume tonnage at Pacific and Atlantic ports, creating a heavy demand for gondolas in these areas. Generally, the supply is fully satisfactory and no deficiencies are anticipated.

The demands for long and wide flat cars are about equal to the supply, but shorter flats are surplus on several lines.

There has been only a slight seasonal decline in demand for covered hoppers, and requirements are exceptionally heavy for this time of year.

Traffic Department

(Continued from page 56)

installed and properly kept up, it will show a complete record of the trip. This record may be checked against the driver's log.

Garage clerk. The most important duty of the garage clerk is to keep an actual record of the cost of operation of every piece of equipment. This record should be kept in a ledger with a separate sheet for each truck or car. This sheet should show among other items, depreciation, tire cost, gas and oil cost, cost of repairs including both parts and labor, and insurance. At the end of each month, the garage clerk should make a report to the branch traffic manager showing the total operating cost of each piece of equipment for the period. The report should also show the actual cost per highway mile and per ton mile of operating each truck. From this report, the branch traffic manager can determine the comparative efficiency of various makes of trucks, and he can determine when each truck should be replaced.

The garage clerk should keep an inventory of the stock of parts on hand, and make a record showing when and to what truck parts are issued.

Mechanics and helpers. Care should be used to secure efficient mechanics whenever possible. One good mechanic is worth half a dozen poor ones. The mechanics should make all repairs which can be made in the average garage. Mechanics and helpers should not be shifted from one truck to another until the job is completed. An important element in the saving of time in the repair of trucks in a private garage is proper equipment and tools. If the tools are owned by the garage, a record should be made when they are issued to each mechanic. Some firms require each mechanic to have his own kit of tools, but this is not advisable.

System is the secret of success in the operation of any large fleet of trucks.

New Products For a New Age

Chemistry's most recent developments in the field of synthetic organic detergents is developing many new products of diversified application which may also affect future marketing practices.

By DAVID J. WITHERSPOON
Special Correspondent

THE dictionary defines a "detergent" as a substance having a cleansing quality or power, as, for example, soap in water. When the fathers of the dictionary coined the word they apparently intended it to have a broad, generic meaning; for until 1930, generally speaking, soap was the only known washing agent. Perhaps they had prescience of modern chemistry's power to evoke through the magic of the test tube new products from the basic, commonplace materials everywhere about us.

Once when we said "detergent" we meant soap and nothing else. Today, when we say "detergent" we may mean soap or we may be referring to new synthetic organic compounds which do everything soap can do and also many things soap cannot do. So many, in fact, and so diversified are its already demonstrated applications that uses for the newest organic detergents extend from the cradle to the grave, from prevention of diaper rash to improved embalming fluids.

In its newest organic detergents chemistry may be said to have evolved a new key for new products for a new age. Many industries devoted to service and maintenance, textiles, paper, leather, metals, paints, insecticides, pharmaceuticals, cosmetics, oils, gases and ceramics are now obtaining important reductions in processing

time as well as improvements in finished products by the use of these new detergents. The coming year, doubtless, will see them introduced in many other fields, under many brand names, by many manufacturers.

Versatile Synthetic

The Nacconol Group, a petroleum derivative, developed in the laboratories of the National Aniline Division, Allied Chemical & Dye Corp., is one of the most recent and most versatile of the new synthetic detergents. The member of the series having the widest utility and adaptability to volume production probably is Nacconol NR. The new organic detergents are usually referred to as "surface active agents," in order to distinguish them from soap, and because the term is descriptive, in a general sense, of their functioning in solution. The specific, limited meaning attaching to the term has resulted from usage rather than from precise designation because, technically speaking, soap also is a surface active agent. However, the term serves in general commercial use for purposes of differentiation.

Surface active agents function through lessening the forces existing among various surface particles of water or, expressed more scientifically, they lower interfacial or surface tension. They have, in general, some or all of the

following properties: "wetting out," dispersing, emulsifying, penetrating and cleaning. The most recent, chemically, are the sodium salts of an alkyl sulfonate ($R-Ar-SO_3Na$) which are characterized by unusual stability, their desirable properties being unaffected by prolonged heating with strong acids or alkalis.

For Nacconol NR, whose aqueous solutions are neutral (pH 6.8 to 7.2) there is claimed an exceptional combination of properties which give the new organic detergent its wide range of usefulness. For one thing, it has the ability to clean in salt water and, in addition, is capable of imparting this quality to soap used in conjunction with it. Known as "salt water soap," it was used in large quantities during the war by the navy, and its use, Adm. G. H. Woodward, chief, Incentive Bureau tells us, contributed substantially to the maintenance of shipboard sanitation and promoted the health and comfort of our fighting men. Used in conjunction with hard water,

(Continued on page 82)

HOW and WHY of the CO-OPS

No. 6 — The Co-ops Face a Challenge



Co-op store at New Haven, Conn., is typically modernistic in design.

THE story of the development of cooperative distribution presented in previous articles of this series may have created the impression that the progress of these farm business associations has been one triumphal, unopposed parade. This is far from correct.

Internally, the cooperatives have encountered all the ups and downs of commercial business. Past experience has taught that there is no magic in the word "cooperation" unless it is combined with efficient operation. Where real need has existed for action on the cooperative plan, and where capital and business volume have been sufficient, the co-op has been successful.

Externally, the trail of the cooperatives from 1810 to the present time is marked by many battlefields.

Leading critic of the co-ops today is an organization of businessmen known as the National Tax Equality Assn., whose president is Ben C. McCabe, head of International Elevator Co., Minneapolis. Board members represent about 30 varied classifications of industry and trade.

The National Tax Equality Assn., Mr. McCabe emphasizes, "recognizes fully the right of cooperative businesses to exist and

prosper as a part of free enterprise, wherever and to whatever extent they prove themselves to be superior as a way of doing business.

"Our quarrel, insofar as the cooperatives are concerned, is with the preferential treatment accorded them by government in respect to taxation, credit facilities and certain other factors, having a direct bearing on competitive positions."

Under federal laws and rulings, NTEA claims, cooperatives enjoy many special privileges, among them the following: They cannot be declared a monopoly; they can give rebates and discounts forbidden to other businesses; they are given preference in purchase or sale of products for government account; they can issue securities without SEC scrutiny or approval; they can borrow federal money on highly preferential terms; they can break through OPA price

ceilings; they can get low rates on railroads; and the farm cooperatives are offered an optional exemption from payment of federal income taxes, provided they meet certain eligibility requirements.

In hearings before the House Small Business Committee last spring, estimates were submitted by NTEA spokesmen, purporting to show how federal revenues could be increased if cooperative associations were taxed on net operating surplus. The instances cited, it was claimed, were "no more than a puny sample of far greater sums that will eventually be revealed as the potential liability of tax-exempt businesses."

Storm center of the controversy are the "patronage refunds" of the cooperative system, which are derived through the practice of charging for commodities at "prevailing market price," and then, after exact costs are ascertained and deducted, returning the overcharge to the patron.

NTEA concedes that these refunds are subject to federal income tax after reaching the member-patron. Corporation profits, on the other hand, they point out, are subject to double taxation, first, against the corporation and then against the individual stockholder.

Many business groups are advocating elimination of double taxation of corporation income, but NTEA's economists have taken the position that the only way to remove the inequality is to apply corporation income taxes to cooperative business. This group recognizes that the basic issue is whether or not "earnings" of a co-

EDITOR'S NOTE: This is the sixth and concluding article of a series on the farm cooperative associations and their relation to and effect upon current practices in distribution. The first article explained why the farm co-ops are big business. The second examined the effect of cooperative methods upon distribution costs. The third discussed purchasing activities of the co-ops. The fourth compared cooperative business with commercial enterprise. The fifth dealt with co-ops for city consumers. The author of this series, a newspaper and magazine writer of many years' experience, formerly was associated in an editorial capacity with one of the large general farm organizations and later with cooperative groups. Since severing these connections, 13 years ago, he has been engaged in writing on business topics.

operative, returned or credited to patrons, is properly taxable as profits.

In essaying the farmers' position, it is well to bear in mind that corporations and cooperatives differ in their purposes. A corporation is organized to make earnings on its invested capital; a cooperative is conducted to perform a service at cost for its member-patrons.

Being non-profit in purpose, the cooperatives hold that they cannot have an income. If this conclusion is granted, there is obviously nothing on which an income tax can be levied.

The common cooperative practice of accumulating capital reserves by retaining a portion of patronage refunds is also being heavily criticised, as constituting, in fact, the avoidance of taxes on undistributed profits.

The contention that these returns should be subject to tax is met by the farmers with the counter assertion that corporations are not required to pay income tax on capital contributions from stockholders. The cooperatives hold that these accumulations of capital have been constructively paid out as refunds to patrons, who then re-invest the money.

Like any business, cooperatives pay state and local property, excise, transportation and other taxes. Under Sect. 101 (12), Internal Revenue Code, an optional exemption from income tax is offered to farmer cooperatives, but not to other types. This exemption is contingent upon the acceptance of certain restrictions on operations, designed to limit competitive advantages.

Figures released by the Treasury Department last Nov. 17 indicate that between 5,300 and 5,700 of the 10,300 farmer cooperatives doing business in the 1943-44 fiscal year were exempt under optional Sect. 101 (12) of this Code.

The report, which was based on information returns required from all types of tax exempt organizations, shows that dividends on stock and other similar disbursements to members by exempt cooperatives averaged only \$2,238 for each co-op reporting.

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Trade Diversion is a Black Market

Trade diversion is the general term applied to those practices which result in the distribution of consumer goods through other than recognized distributive channels. It is more insidious than wartime black markets and exists virtually with legal sanction or the equivalent in 42 states, taking profitable sales from wholesalers and retailers in a wide variety of merchandise.

THERE is a peacetime black market which makes wartime black markets appear insignificant, because the scope of merchandise is greater and because under the equivalent of legal sanction 42 states still permit this uneconomic competition to survive. We are talking about "trade diversion."

Trade diversion is the general term which has come to be applied to those practices which result in the distribution of consumer goods through other than recognized distributive channels.

On the basis of prewar estimates of the volume involved in these practices, but considering new peace-time volumes and increased prices, it is now estimated that this type of black market will amount to about two and a half billion dollars a year with the full flow of consumer goods.

Trade diversion got its start years ago when the purchasing of merchandise by employees was offered in lieu of compensation.

Retailers must be alert to the possibilities of this practice being used to a greater degree than ever before in meeting the demands for increased compensation to offset the cost of living rise.

A substantial indulgence in this practice by employers throughout the country could seriously affect our retail distribution system.


The methods used in trade diversion are almost always deceptive to the consumer, unfair to the established retailer, damaging to the reputation of the manufacturer and generally unsound economically.

Before the war you probably also felt that trade diversion did not exist in your particular area, which may have been true as to



By **ARTHUR L. GARNISS**

New York Council,
Retail Trade Diversion, Inc.

Reprinted from *Hardware Age*
A Chilton  Publication

some of the practices but probably not true as concerns all of the practices. Regardless of the degree to which they existed before the war, shifts in the population and in industries during the war will have a tendency in many areas to encourage trade diversion practices which did not exist there before.

Many retailers make the statement that trade diversion does not exist in their communities for the reason that they do not know exactly how these practices operate or where to look for them, so as briefly as possible, we will try to give you that knowledge in the following material.

Trade diversion can be broken down into three major practices:

1. Manufacturers and distributors who sell directly or indirectly to the consuming public, contrary to a declared policy.

2. Discount houses and fake wholesalers.

3. Industrial selling. (This is obviously a misnomer as far as the wholesale and retail hardware trade are concerned as such a designation suggests sales to industrials and not as intended in this article to denote the practice whereby employers purchase directly or indirectly all manner of merchandise other

than their own products at discount prices for their employees.

Nationally advertised merchandise is most commonly associated with trade diversion practices but does not always represent the greatest volume diverted from proper wholesale and retail channels. This type of merchandise is often used as "bait" to induce the consuming public to buy unidentifiable merchandise which often causes the consumer to sustain a great loss from the standpoint of value received. These tactics involve such merchandise as: tools, clocks, all kinds of electrical goods, cooking utensils, leather goods, furniture, furs, clothing, jewelry, etc.

Where such merchandise is fair-traded, as are and many more will be, such cut price sales are definitely subject to legal action in all states except Missouri, Texas and Vermont.

If, upon advice, the manufacturer will not prosecute such violations then either wholesalers or retailers should take such action.

Manufacturers who professedly depend on established retailers for distribution, and who at the same time engage in direct selling to the consumer—such as reciprocal sales for the benefit of the employees of other corporations—are following a procedure that is based on ignorance of sound distribution methods, carelessness in operation, or is the result of deliberate intent.

If such selling is due to ignorance or carelessness, it is possible that the customer may be able to buy at a price substantially less than retail. Where it is deliberate, because the retailer is consciously circumvented, it is likely that deceit will also enter into the sale to the consumer, and altogether prob-

able that he will not only fail to obtain the "factory" or "wholesale" price, as stated or implied, but that he may actually pay more than the normal retail price.

In the case of indirect diversion, deceit is fundamental. Unlike direct selling (which presents a comparatively simple problem) indirect diversion spreads out in a complicated web, and all such schemes are wholly, or in major part, misleading.

First, the consumer may or may not get what he thinks he is buying and rarely, if ever, has recourse even where branded goods are concerned.

Second, the manufacturer selling through such channels contaminates his distribution system and undermines his price structure.

Third, the established retailer is libeled—for it is the alleged "high cost of retailing" that comes continually under attack by the activity that represents itself to be something other than retailing.

Here are some of the leading methods of indirect trade diversion:

Discount Concerns

The Discount Concern: This type is the most prevalent. There are hundreds in such large cities as New York, Boston, Philadelphia and Chicago, as well as many operating in smaller communities frequently unknown to the local retailers. Their operations are based on using the retailer for his showroom, cutting the price on price fixed merchandise in violation of the law and using this merchandise as "bait" to sell inferior unidentifiable merchandise.

These "discount" concerns are located near the centers of employment in most large cities. Some are operated by former employees of business corporations engaged in purchasing for employees. Some are high-class in appearance; others are cheap and shoddy. Frequently they are in upstairs rooms. They carry very little stock (mostly items well known because nationally advertised), but depend generally on contacts with certain resources—manufacturers, jobbers, wholesalers, or retailers—who undermine their own trade's interests

by transshipping. What they do not carry in stock, or list in a catalog, they "handle" by referring the customer to so-called "wholesalers."

For a long time all of these concerns preserved the fiction that they were exclusive in their clientele, but now most are wide open to the public. All, however, still seek trade in much the same way:

"Courtesy Cards"

They print and distribute elaborate catalogs. They distribute "courtesy cards." They personally solicit the purchasing and personnel officers of large corporations. They circularize entire office buildings. They depend on word-of-mouth promotion.

The So-Called Wholesaler: The so-called wholesalers in the larger cities sell many types of merchandise—principally unbranded and unidentifiable items, such as furniture, jewelry, furs, etc. There undoubtedly still are many and will be more, but, with the increasing agitation against the practice, the more astute operators have changed their tactics and call themselves "manufacturers' representatives" or "distributors," etc.

The Employee Assn.: It is a common practice among "discount concerns" to play on the accepted definition of "cooperative." In some catalogs occur phrases such

as: "Dividends and extra dividends." "Operated on the co-operative principle." "Cooperative buyers."

Credit Unions: Credit unions engage in buying for members or in obtaining discounts for them. In some instances it would appear that "discount concerns" are used as a lever to pry privileged discounts from retailers.

Independent Broker: Another result of loose distribution methods is the independent "broker." One such is the salesman who improperly claims he represents a manufacturer. Another is an individual (usually a minor employe in a big office or plant) who acts as order taker (for a commission or fee) for the principal agent.

These "brokers" depend on manufacturers' catalogs and retailers' displays.

State Legislation

Some cities have had a small success in meeting these problems through the help of local law enforcing bodies or the Federal Trade Commission, but in the main, these practices cannot be met by moral suasion or existing laws.

State legislation more specifically treating these problems as now exists in Wisconsin, Minnesota, Michigan, Illinois, Ohio and Pennsylvania is needed.

Here Is the Trade Diversion Black Market—
Only Six White States on the Map!



Integrated Distribution



Hearn chemists test products, and make suggestions to manufacturers based upon scientific findings. In this manner, costly merchandising failures are avoided.

In Department Stores

IN this postwar period, it will be extremely necessary to have all retailers work closely with manufacturing vendors. Unless there is a cooperative spirit displayed by both groups, consumers will find it impossible to obtain proper knowledge regarding various kinds of merchandise.

Through effective cooperation between vendors and retailers, the consumers can be assured of full knowledge of the wares offered them. In addition, goods can be prepared which will more closely conform to consumers' requirements. Sizes can be worked out to assure better fittings without resort to numerous and unnecessary alterations. The products, thereby, will be in accord with the final wishes of consumers at the very time purchase is decided upon to fill an immediate need.

Integration of efforts by vendors and retailers will also permit

inclusion on labels of all descriptions needed to give consumers full knowledge of the merchandise in the package, and, as a result, enable them to obtain the utmost benefit from their purchase.

Cooperation between these two groups will also contribute to appreciation of the problems of both, help reduce the cost of merchandise, build up better production, and enable retailers to place orders well in advance so as to keep manufacturing vendors busy even during dull periods.

Personal Trips

Building good will with the vendors is an important function of the executive in retail establishments. On behalf of our company, I felt it highly vital to provide for personal trips over a period of months, in fact years, to mills throughout the country to talk with the owners, get them to

● Integration of the phases of distribution is being accomplished in the department store field. This integration permits the review of merchandising problems from the points of view of manufacturer, retailer, and consumer.

By **LEONARD GINSBERG**

President, Hearn Department Stores, Inc.

understand our problems, and to come to learn theirs at the same time. These conferences have developed better understanding with regard to the future, and have provided the basis for cooperation in programs of benefit to vendors and to retailers.

In Hearn's, several divisions are linked to this integration of efforts between producers and our department stores.

There has been provided, for illustration, a service on trade marks to build up our own brands. Packaging has been approached cooperatively with a view toward providing more presentable gifts with proper color schemes to assure all-around attractiveness. This action helps the sale of multiple items in the same package and furthers "suggestive selling."

This cooperative undertaking was planned well in advance by the buyer and the coordinator of brands, both of whom visited the vendors to discuss the items, packaging and production along lines which permit labeling according to specifications set up by a special bureau of standards within Hearn's organization.

The efforts at integration are extended to consumer leagues which are consulted through our bureau of standards. By this cooperative research, it has been possible to bring definite facts before the vendors with regard to the kinds of merchandise the consumer actually wants.

One of the most important functions of Hearn's bureau of standards is to aid in the development of new or improved merchandise by constructive criticism.

This special bureau of standards has the background and the

equipment to help in the following ways:

1. When new products are being planned, someone from Hearn's visits the manufacturing plant and, with the buyer, sees that the features needed to make the item saleable and durable are incorporated.

2. We can test and examine experimental models and suggest improvements.

3. We are expert at drawing up labels and instructions which help to sell products, and which keep them sold.

4. Because of our wide knowledge of a number of industries, we can suggest the use of materials or methods of manufacture which may reduce costs or improve quality.

The four methods of cooperation between Hearn's bureau of standards and manufacturers are, of course, broad and overlapping. They can be discussed individually to a limited extent.

During the war, we did little along the line of visits to manufacturing plants while new products were being planned. As reconversion gets under way, however, we expect to expand this phase of our work.

Several years ago, we had some trouble with length of Bandbox stockings. After a visit to the factory, it was found that the inspection system was poor. A better system was suggested and installed at very little expense.

When it became necessary to revamp our vitamin line because of changes in government regulations and in packaging materials, several plants were visited for study of all phases of the problem. We were able to suggest proper potencies and packaging, and to help our vendors put out a good line of properly labeled vitamins.

Testing of experimental models has been going on continuously.

When nylon parachute fabric was released and was used by lingerie manufacturers, we found that they failed to allow for the tendency of this fabric to slip at the seams. By pointing to the necessity for bias cut, reinforced seams and avoidance of cotton lace trim, we were able to secure

satisfactory nylon brassieres and slips.

Recently a manufacturer submitted for test a reconversion model of an electric iron. We found that he needed guidance in setting of the automatic controls and in construction of the handle. The suggestions of our bureau of standards and of the buyer will result in the production of a better iron.

The same manufacturer showed us a rough sketch of a proposed electric room heater. As a selling point, he had added a water evaporator to humidify the air. This was pointed out by us as being impractical, because it added almost \$10 to the retail price, and it made for less efficient heating.

A victory model ice refrigerator, when originally submitted for testing, gave poor performance.

CUT DOWN INVENTORIES!
INCREASE TURN-OVER!

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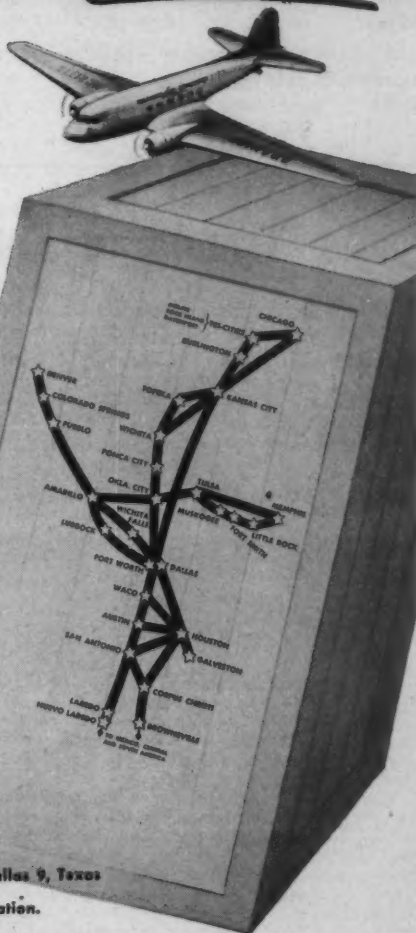
Regular day-in, day-out cargo shipments by BRANIFF Air-FREIGHT eliminate large warehouse inventories, allow you to replenish stocks quickly. Choice of airport-to-airport, or pick-up and delivery rates... only one simplified shipping document... reduced charges.

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General Traffic Office, Love Field, Dallas 9, Texas

Write for tariffs and further information.



A wall paper lacquer recently submitted was found to be very good, but it required care in

Another interesting case involving instructions concerned a resin finished cotton fabric. The manufacturer recommended careful washing in lukewarm water. We found on test that the finish could withstand hot water, and furthermore, that worked-in soil would

Integration of the phases of distribution in a broader sense being accomplished in this way. It permits review of merchandising problems from the angles of manufacturers and retailers, and results in improvements which are highly desirable.

DEPARTMENT OF COMMERCE Bureau of the Census Washington 25, D. C. Annual Survey of Sales and Inventories of Independent Retail Stores	Budget Bureau No. 0000 Approval Expires 0000- Form 002-0000
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Please return this report to the Bureau of the Census, Washington 25, D.C., in the enclosed postage-free envelope not later than JANUARY 31, 1966. Please correct your address if incorrect.	SEE REVERSE SIDE FOR INSTRUCTIONS 1. This report should cover all stores which you operate. Give number _____ (Number) 2. My principal kind of business is _____ (Example: grocery; drug; hardware)
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<div style="text-align: center; font-size: 2em; transform: rotate(-15deg); opacity: 0.5;">Specimen</div> CENSUS REPORTS ARE CONFIDENTIAL Your report on this census schedule is accorded confidential treatment, subject to the provisions of law. This inquiry is authorized by law.	TOTAL ANNUAL SALES: _____ (1965 count) 3. Year 1965.....\$ _____ 4. Year 1964.....\$ _____ MERCHANDISE INVENTORY: _____ (1961 count) (Include only items which are for sale. Report inventory at cost. Show date of inventory if other than December 31.) 5. Dec. 31, 1965.....\$ _____ 6. Dec. 31, 1964.....\$ _____ (1961)
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Results will be shown for 44 kinds of businesses in these 15 groups: food, general stores, general merchandise, apparel, furniture-household-radio, automotive, filling stations, lumber-building, hardware, eating places, drinking places, drug stores, liquor stores (packaged goods), other retail stores, and second-hand stores. The reporting schedule shown above which retailers will be asked to fill out, will be a very brief one, requiring only information that the retailer normally maintains. Director Capt pointed out that this survey is authorized by law, and that the returns will be accorded confidential treatment. The reports filed by the retailers are to be used solely for the preparation of statistical summary information.

A new marketing organization plans a streamlined food store on wheels. Mobile store units will radiate from a district store on regular schedules, carrying everything the housewife needs right to her kitchen door.

Store to Door on Wheels

By ELSA GIDLOW

IT is obvious that today's challenge to free enterprise is in the field of distribution, as it affects civilian life. Now that military secrecy is no longer necessary, we have learned of distribution miracles achieved by government under the stress of war. There is no doubt that business will be able to adapt many of these achievements to peacetime commerce. One of the greatest obstacles we must surmount is the quite natural resistance to modernization on the part of those who will be liquidated by it, or who will see in some streamlined system of distribution, whether wholesale or retail, an "unfair" competitive threat.

A distribution system as new as tomorrow, which takes this difficulty into consideration and provides for it, has, therefore, great significance.

"Store-to-Door on Wheels" seems to offer, at first inspection, marketing Elysium to the housewife, disaster to the corner grocer, and such competition as has never been dreamed of in the cash-and-carry

(emphasis on carry) philosophy of the minor and super chains. But the little grocer, and the big one too if he pleases, may enter Elysium with the housewife; Associated Food Distributors, Inc., San Francisco, Cal., the \$5,000,000 corporation sponsoring Store-to-Door, has no wish to do the grocer wrong. On the contrary, the new organization believes it can make life easier, more varied, and more secure for the grocer. The first persons to be invited to become co-owners of and workers in Store-to-Door are present food store operators, and service men who plan to start in business after the war.

General Store

Store-to-Door will be corner grocery - milkman - baker - butcher - supermarket - mail order house, all rolled into one, with some additional services thrown in for good measure. Associated foods has some wholesale distribution revolutions up its sleeve, too.

The new marketing group plans streamlined food stores on wheels.

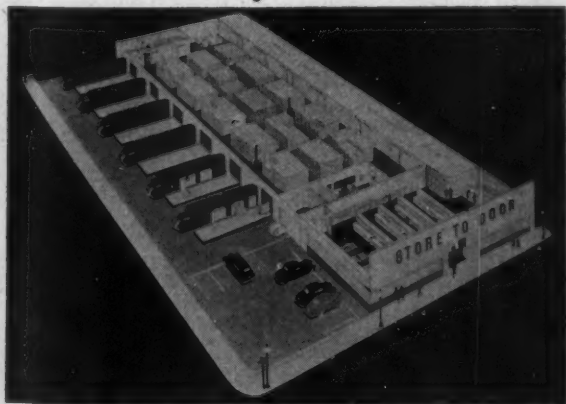
Mobile units will radiate from a district store on thrice-weekly schedules, bringing everything the housewife needs right to her kitchen door.

The system includes a main depot, district stores, and a fleet of traveling stores, each of which has eight clerks equipped with small individual trucks to cover the eight sides of an intersection for delivering, servicing, and order taking.

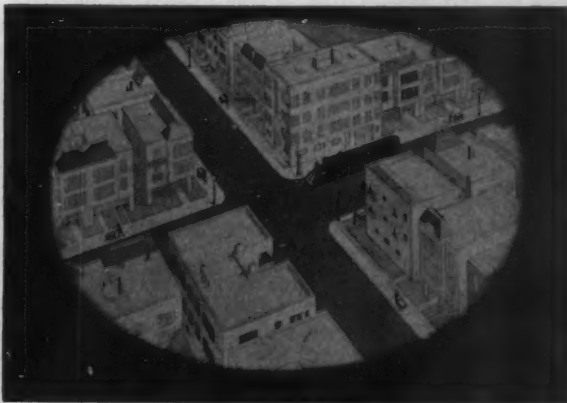
The main depot is to be located in the wholesale section of the city. "These depots," says George L. Riccomi, president of Associated Foods, who conceived the system, "will be equipped with every modern facility for the storage of fresh and frozen foods, staple and packaged items, and for the processing of meats."

Associated Food Distributors was incorporated last October, under California state laws, with an authorized capitalization of \$5,000,000. The company has just received permission to offer for sale 50,000 shares of its common stock

The modernistic Store-to-Door terminal.



Store-to-Door sales trailer in action.



at the par value of \$10 per share, for the purpose of acquiring specially constructed trucks and trailers, and for the purpose of establishing district stores and warehousing facilities.

One main depot in each city will serve the strategically spotted district stores, which will be located away from congested areas. These district stores will receive from the main depot supplies which will be placed in sanitary storage for transfer to store shelves, or to the fleet of mobile stores.

The plan calls for the fleet of mobile stores to be loaded from dis-

trict store stocks. Each plastic-bodied truck-trailer will have a crew of nine men, a driver, and eight salesmen-clerks. The mobile store will follow a regular route, bringing service three times each week to every door on its schedule. Parking at a given residential street intersection, the eight salesmen, each with a rubber-tired hand conveyor, will call at houses on the eight sides of the intersection, delivering such everyday food needs as bread, butter, milk and eggs, from the conveyor. At each door, the salesman will take the housewife's order for the remainder of her food requirements.

Eventually (when equipment is available and licenses are issued by the FCC) each salesman will be furnished with a short wave "walkie-talkie" radio which will keep him in constant touch with the traveling store parked at the corner. Orders flashed in to the driver will be filled, and delivered immediately by motorcycle and side car to the waiting salesman.

Meanwhile, the salesman will pick up laundry and dry cleaning, place it in a bag, tagged with customer's name and address, and return it (via motorcycle) to the special section of the trailer provided for such storage.

Trends in Trucking

(Continued from page 48)

the more expensive large trucks, in general, have been careful of their heavy investments, while the operator of smaller trucks has been more likely to grow careless in making excess demands upon his vehicle.

The trend toward increased cargo demands, and the quest for lower distribution costs point toward the adoption of larger trucks. This is indicated in an announcement by Ford Motor Co. of plans for a larger truck. No size has been specified, but it is thought that the familiar 1½ ton truck will be joined by a heavy duty 2½ ton truck when a new model is put into production. At present, Ford is attempting to place its entire range of prewar truck models back into production, rather than seeking to bring out new models. This is true of most of the other large companies.

For years, the 1½ ton truck has been the workhorse of industry, especially in the great spread of industrial and farming states between the eastern and western mountains. On the west coast, the trend has been toward a heavy duty truck, while on the east coast, a medium truck generally has been preferred.

Nearly all states have 18,000 lb. laws. This approach toward a common standard, however unacceptable it may be to many trucking

operators, does provide a good index to probable development of truck sizes.

Efficient Muffling

Quieter operation may be expected as a future development. Elimination of noise will come about through more efficient muffling. The external noise of truck operation has been a familiar source of ill will, and foresighted operators would like to improve this condition.

Internal noise, which creates both an annoyance and a hazard to the operator, will also be reduced. Production of better and more comfortable trucks is expected to attract a higher caliber of truck driver and mechanic.

A new type of cooling system may be adopted. Pressure cooling systems were developed in North Africa to meet the exceptional conditions of heat and aridity under which military vehicles were forced to operate. Operating temperatures were maintained at a workable level by placing the cooling system liquid under pressure. Application of this system to civilian trucks will facilitate long hauls in hot climates.

An interesting development is that of either vacuum or compressed air control on the two-speed axle, by Timken-Detroit Axle Co. All the operator need do is to press

the selector button, and the shift is made automatically, instead of manually. This development will contribute materially to the maintenance of steady speed in traffic.

The long-term trend in truck development clearly is toward more specialized vehicles, according to the consensus of present engineering thought.

Wartime experience has taught the truck operator that the best buy is the truck that will do the best job under his own operating conditions. Operators have learned that the original purchase price is not the proper determining factor in the selection of a truck, but rather the overall average cost per ton-mile or truck mile as the case may be, figured on a lifetime basis, including depreciation and all operating expenses. Efficiency to do a given specialized task, and reliability of performance must also be considered. These factors point to the selection of a specialized vehicle.

Truck costs are expected to remain close to prewar figures for similar types of vehicles. Indications at this writing are that automotive manufacturers will follow this policy for competitive reasons, regardless of higher price ceilings. The auto industry is looking to the long-term market.

Comprehensive Liability Insurance

● The new year will see increasing use of comprehensive liability insurance, because it provides in one contract the protection of numerous individual policies

ONE of the most promising developments in the liability insurance field is known as "comprehensive liability" coverage, which combines in one contract many specific liability policies which ordinarily would be written separately. In this new form of coverage, a single contract covers automobile liability, manufacturer's and contractor's liability, owner's, landlord's and tenant's liability, elevator liability, contractual liability and product liability.

In addition to the protection outlined, comprehensive liability insurance provides protection against unknown liabilities to which a business may be exposed. Another important advantage is automatic liability coverage of any property acquired by the insured during the policy year, without the usual required necessity of company notification. Moreover, all ambiguity as to intent, which frequently arises as the result of conflicting clauses or verbiage in separate specific policies, is eliminated.

The provision granting a policy holder the right to automatic coverage of newly acquired property is made possible through an appraisal of all possible risks prior to the issuance of a policy. In some states, laws regulating insurance do not permit inclusion of automobile liability. However, wherever possible, all liabilities should be included in one policy.

Rates are determined by adding the cost for each liability assumed, plus a one percent charge for "unknown" liabilities to which a business may be subjected. Expressed in dollars and cents, this one percent is usually much less than a firm would be required to pay in legal fees in the event of litigation.

A contract covering comprehensive liability may be written at any

By CHARLES F. RUPPRECHT

Associate Editor

The Spectator, Property Insurance Review

Lower Rates in 1946

WHILE no adequate approach to the problems of reforming company operational methods (required under the U. S. Supreme Court ruling of June 5, 1944, which defined insurance as interstate commerce) is yet evident, rates during 1946 are expected to be lower. The full effect of the decision, which reverses an earlier ruling handed down 75 years ago during Chief Justice Marshall's regime, has been delayed by Congress until Jan. 1, 1948, through enactment of Public Law 15, granting the states and companies time to reform state supervision and procedure voluntarily. If approved state legislation is forthcoming, Congress is expected to refrain from the promulgation of regulatory measures similar to existing interstate laws affecting transportation.

During the past year, many states have drafted bills aimed at securing more effective control of the insurance industry. Nothing, however, of immediate interest to policy holders seems likely to result therefrom because state officials, in the opinion of some authorities, have yet to show real understanding of basic rating methods.

Rate reductions initiated voluntarily by the companies themselves, through fear of Federal regulation, are limited in application. The situation is complicated, some experts believe, because neither fire insurance companies nor state officials have sufficiently adequate statistics for guidance in determining rate structures.

time, regardless of the fact that there may be individual liability policies currently in effect covering the same risks. In this event, full credit is allowed for the unearned premium of all the specific liability policies in force and when these specific policies expire, they are automatically assumed under the new master contract. No business, in my opinion, can afford to be without this complete contract, which eliminates all liability insurance worries and obviates the necessity of deciding upon proper verbiage for individual policies.

Comprehensive contracts are usually typewritten, rather than printed. They are drawn up in accordance with the specific requirements of a business. Ordinarily, where individual policies are issued, an attempt is made to fit requirements to the printed word.

The same type of comprehensive policy can be purchased by individuals to cover personal liabilities by reason of ownership or tenancy of a home or an apartment; or by reason of outside personal activities, particularly sports. Such a policy is priced at \$10 per year, or \$25 for three years, and is well worthwhile, since it affords protection against unwitting acts committed by the holder or by someone on his premises.

Insurance Questions Answered

Charles F. Rupprecht, authority in the field of property and liability insurance, and a regular contributor to this publication, is prepared to answer questions from readers about insurance coverage problems as an underwriter, rating engineer, state agent, vice president and partner. Mr. Rupprecht has been identified with the practical side of insurance for 38 years. He is at

present associate editor of *The Spectator*, a Chilton publication, the oldest in the insurance field.

Questions addressed to Mr. Rupprecht having sufficient general interest may serve as topics for future articles and others will be answered through the medium of a questions and answers column. When desired, questions will be treated confidentially.



New World Standard

The claim is proved. Lockheed Constellations will bring new standards of world transportation to every country on every continent. In regular scheduled service first on these great airlines:

AMERICAN AIRLINES OVERSEAS * AIR FRANCE * ROYAL DUTCH AIR LINES (KLM) * NETHERLANDS INDIES AIRLINES (KNILA) * EASTERN AIR LINES * PAN AMERICAN WORLD AIRWAYS * PANAGRA * TRANSCONTINENTAL & WESTERN AIR (TWA)

Lockheed Constellation

Look to Lockheed for Leadership  Years Ahead in the Science of Flight

Air Cargo . . .

(Continued from page 46)

in the country in 1939, provided, again, that shippers and receivers of these products are properly sold on air transportation.

Benefits derived from air transportation for this industry in parts and accessory distribution are: (1) Better service to the customer on parts not available locally. (2) Improved competitive position for a manufacturer since substitutions will be less willingly accepted if the "authorized" article can be offered for sale and delivered quickly. (3) Reduction in stocks of slow-selling parts.

One part of the Air Cargo, Inc., research was a mail survey of 3,654 manufacturers, wholesalers, and retailers in 13 states. While no quantitative estimate of air cargo potential could be derived from the replies, they did produce "highly useful qualitative information," especially on such subjects as airport-to-airport service, central depots, deferred service, and other requirements of an air cargo service. Two hundred thirty-five replies suitable for tabulation were received.

The replies indicate that the principal reasons why speed is important on shipments, in order of their importance, are: 1. Quick delivery reduces cancellations. 2. Repair parts must arrive promptly. 3. Production schedules must be

maintained. 4. Seasonal selling periods are short. 5. Style factor is important.

On receipts, the principal reasons given in order are: 1. Repair parts must arrive promptly. 2. Production schedules must be maintained. 3. Seasonal selling periods are short. 4. Style factor is important. 5. Quick delivery reduces cancellations.

The principal difficulties experienced with air transportation, according to the survey, are: 1. Rates too high. 2. Inadequate pickup service. 3. Delay after arrival at airport. 4. Service not dependable. 5. Lack of local air transportation. 6. Lost shipments.

Taking the median of the replies as to the proportion of traffic inbound and outbound now moving by railway express which would move by air in the retail field at four possible rates, the figures were as shown in Table I. Figures for outbound traffic are also shown in this same table for manufacturers and wholesalers.

At all rate levels the apparel industry probably will be the largest user of air transportation. Speed is important here because: the business is seasonal; retailers carry limited stocks; sales can be considerably increased in areas distant from manufacturers, and merchandise will arrive in better condition for sale.

The second largest potential user of air cargo, at most rate levels, is

Conclusions . . .

OUTSTANDING conclusions in the recent report on "The Present and Future Outlook for Air Shipment of Fresh Fruits and Vegetables," made jointly by Ralph E. Myers, chairman, and Glenn F. Phillips, co-chairman, air transport committee, United Fresh Fruit and Vegetable Assn., include the following:

Planes must be able to carry a minimum payload of 18,000 lb. They must be equipped or insulated both for cold and heat control within a range of 36 deg. to 42 deg. F. They must be built to accommodate palletized loading, so that lading can be pre-determined on the basis of varying densities, and arranged automatically for balance. They should be designed and built to provide a cubic loading space, as opposed to the cylindrical shaped fuselage interiors now available. They should be constructed to permit level loading and unloading at customary truck heights.

Transportation charges or rates should be predicated upon a zoning method, similar to the group commodity rates in effect on rail tariffs, to the end that cost to ultimate buyer, regardless of distance from shipping point, can be approximately similar in all markets.

Exact controls of quality, grade and maturity are possible with air freight, since 100 percent delivery in comparable condition is attainable. Air shipments can and should be pre-packaged and identified as airborne; the shipper is thus able to maintain his consumer brand identification. The consignee must be prepared to unload the plane immediately on arrival and to place shipments in adequate storage properly protected against undesirable outside temperatures. Better educational and merchandising methods are required for fast turnover of airborne freight.

likely to be the machinery industry. The motor vehicle industry probably will be the third or fourth largest user at all rates. However, the motion picture industry may be the third largest user at the highest rate level, 76c. per ton-mile, and the fourth largest user at 47c. per ton-mile.

The survey revealed that, in general, as the rate per ton-mile dropped, industries tended to assume positions as users of air cargo comparable to their rank as users of railway express. This is only natural because as air cargo rates approach the railway express level, shippers will demand that the premium they pay over and above l.c.l. or freight forwarder rates go towards moving their goods at the faster speed of air transportation. Thus, more and more of the railway express business will move into the air as time goes on.

The results of the Air Cargo, Inc., study as well as others that have been made recently leave one with the distinct impression that although air cargo rates are still comparatively high (air express averages about 75c. per ton-mile; air cargo, as covered in the tariffs of the airlines so far offering this distinct service, averages about 60c. per ton-mile; railway express averages about 40c. per ton-mile) and the services far from perfect; the improvement of airline services and equipment have far out-distanced the promotion of air cargo to the shipping public. It also seems clear that merely increasing the efficiency of the services and equipment will not necessarily be followed by an increase in the volume of air cargo shipment. Increases can only be obtained in proportion to the shipper's, and sometimes the receiver's, recognition and acceptance of the advantages of air transportation. Present shipping habits are strong and the fact that so much tonnage is possible of diversion from ground carriers, as indicated by the Air Cargo, Inc., study, does not mean that it will make the change overnight. The only way a change can be brought about is by educating users and potential users how best to cash in on what air transportation offers, which means an intelligent, aggressive promotional airline program.

NOW! New Low Rates *FOR* Air Express

Jan. 1st Cut Saves Shippers 22% Over '43

Send it by Air—Get it by Air

More Economical Than Ever to Ship the Fastest Way

HERE'S HOW LITTLE IT COSTS

AIR MILES	2 lbs.	5 lbs.	25 lbs.	40 lbs.	Over 40 lbs. Costs per lb.
149	\$1.00	\$1.00	\$1.00	\$1.23	3.67
349	1.02	1.18	2.30	3.68	9.21
549	1.07	1.42	3.84	6.14	15.35
1049	1.17	1.98	7.48	12.28	30.70
2349	1.45	3.53	17.65	28.24	70.61
Over 2350	1.47	3.68	18.42	29.47	73.68

Another drastic cut in Air Express rates now makes this high speed transportation more important to American business and industry than ever before!

Where, in the whole economy of business, do you get so much for your transportation dollar:

SAME DAY delivery between many airport towns and cities as far as 1,000 miles apart. (Less than 6 hours by air.)

SPECIAL HANDLING. Special pick-up and delivery (no extra cost) promotes speed of Air Express delivery.

GOES EVERYWHERE. In addition to 375 airport communities, Air Express goes by rapid air-rail schedules to 23,000 other important points in this country. Service direct by air to and from scores of foreign countries in planes of American manufacture and reliability giving American service, flying the American Flag!

WRITE TODAY for "Jig Saw Puzzle." It contains illuminating facts to help you solve many a shipping problem. Air Express Division, Railway Express Agency, 230 Park Avenue, New York 17. Or ask for it at any Airline or Express office.

AIR EXPRESS

 GETS THERE FIRST

Phone AIR EXPRESS DIVISION, RAILWAY EXPRESS AGENCY
Representing the AIRLINES of the United States

Experts Forecast Distribution Trends

Railroads . . .

(Continued from page 29)

pioneered by Southern Pacific. Trains were operated on such fast schedules that waybills had to be telegraphed to reach destinations in advance of shipments.

Postwar planning of Southern Pacific is not limited to improvements in rolling stock and schedules. The railroad thinks of its work first in human terms, and has already launched conference-type training courses in human relations for all its employees whose duties bring them in contact with the public.

Our major aim will be to get and hold volume of business by giving the customer what he wants at a price he can pay, at the same time giving him the utmost in friendly, personal service.

Marketing . . .

(Continued from page 30)

nomical distribution of the factory's output, means selling each unit of output to an individual consumer. Each potential sale is prescribed by that individual's (1) need, (2) desire, (3) likes and dislikes, (4) ability to purchase, (5) habits and customs, (6) location or environment.

In brief, without the function of efficient distribution, mass production would still be a distant objective, for it is mass distribution that has created the demand for more and better consumer goods and thus made possible greater productivity through stimulating the desire of more people to own the commodities that modern marketing makes available.

Spending power by itself is static. It only becomes a motivating force when buying power becomes active spending. Marketing (embracing all the functions of merchandising and advertising) supplies the generating spark that completes a profitable production cycle.

Southern California is the major distribution center on the Pacific Coast. In fact, it is the most im-

portant volume center west of Chicago. Hence, it is obvious that Southern California is the vital keynote to Pacific Coast business operations and business potentials. The past five years have seen a 20 percent gain in population. The average per capita income in this area is about 40 percent higher than the national average; so, with more people and more money, the index is obvious. Southern California is the third largest marketing area in America.

Insurance

By W. P. HERBERT

Manager
Insurance Ass'n of Los Angeles

THIS year certainly will be a big year for insurance on the west coast, predicated, of course, upon the amount of federal "interference" in insurance operations.

There has been and still is a tremendous migration to California, entailing the transportation of furniture and goods to this section of the country, naturally to be covered by insurance. With more truck deliveries being made, there will be a great advance in the amount of perishable and non-perishable goods being shipped by highway, augmenting that carried by the railroads. This material and the trucks must be insured.

With so much accumulation of cash ready and willing to be spent, with salary increases, tax reduction, etc., the people are buying freely of furs, jewelry, furniture, residences, rental and mercantile properties, and are prepared, when materials are available, to build. This all entails transportation and distribution, which in turn necessitates insurance of all classes of goods, and in increased amounts to cover additional values.

Then there is aviation. The future will bring a great increase in commercial, passenger and private planes. This class of insurance has in the past been highly specialized, with a few companies writing, but now more and more companies are becoming aviation minded and are in the market for this class of business.

Warehousing . . .

(Continued from page 29)

be seen in our part of the distribution system. Spot stocks, long missing because of materials shortage, should reappear. Intercoastal shipping may be a regular thing again and its cargoes have always meant work for us to do.

But we are going to have our difficulties. Expenses, particularly labor, have increased materially and good service is expensive. Mechanical handling which was so efficient in moving large lots of government freight has not yet shown that it can be adapted to all commercial freight, particularly small-lot merchandise. New tools, suitable for multi-storied buildings, undoubtedly will be developed and we will go through a period of experimentation.

Packaging . . .

(Continued from page 28)

By a scientific study of his shipping problems, this number was cut down to 35. By a slight change in dimensions of the consumer package, he was able not only to save on his containers and shipping costs, but to meet the demand of his storeroom, shipping department, and warehouses.

In the second instance, each part of the country has its own characteristics and conditions which a package should meet. Climate, trade and living customs, and shipping conditions vary greatly in the east, middle west, and west coast.

In the third place, the shipping container itself can be utilized as a distinctive advertising form without creating any additional expense. Arresting and effective designs can be obtained through simple application of the trademark, a short message, and scientifically chosen attractive and attention compelling colors. The shipping container while protecting the merchandise in transit can do a real selling job, as it carries product identification all the way from the factory to the retail store.

Opportunity . . .

(Continued from page 25)

It is a privilege created by the will and the needs of the people, for which we must be humbly grateful.

I, therefore, think the time is particularly fitting for all of us to take stock of the basic responsibilities which we seek to discharge and of the guide-rules by which we work. That, I have done rather briefly, below:

1. Our basic responsibility is to promote a steady rise in the American standard of living. We work for an ever-increasing volume of goods and services, of better quality, produced at lower unit costs. We thus foster, encourage and participate in scientific advancement; strive for the maximum in technological improvement and increased efficiency; and seek improved and cheaper methods of distribution. We make every effort to secure equitable division of the increments of progress: to the public, through lower prices; to our employees, through increased wages; and to capital, through fair returns on investment and legitimate rewards for risk-taking.

2. Our basic standard of conduct is competition. Freedom of enterprise is indispensable to the nation's welfare. Enterprise cannot remain free without competition.

3. The right to work is a base right. We are committed to the principle of full employment and will bear our full share of responsibility for establishing and maintaining those conditions under which it is possible. We respect the dignity of American workers, have faith in their loyalty to the American system of free enterprise, and are confident of their fundamental desire to give a full day's work for a full day's pay. We devote ourselves to providing the best possible wages, consistent with equity to the public and to investors, for all employees organized and unorganized. We honor the right of employees to organize and bargain collectively, and we engage in collective bargaining with freely authorized representatives of employees in good faith and all sincerity. We will keep the stairways of opportunity open.

Industrialization Abroad

Industrialization has become an established trend in some countries. Will our present inability to supply goods make for more industrialization in other countries? If so, what is likely to be the effect on the United States?

By GEORGE F. BAUER

International Consultant

ORDERS from abroad for all kinds of goods from the United States are available in large numbers; money to pay for them is ample, but the supply is inadequate.

Will our present inability to supply goods, traceable to reconversion problems, labor conditions and governmental controls, make for more industrialization in other countries and, if so, what is likely to be the effect on the United States?

During the war, industrialization abroad became not only necessary but, in some instances, was recommended and assisted by our government. Industrialization, consequently, has become an established trend in some countries.

"Mexico," according to Dr. Antonio Espenosa de los Monteros, Ambassador from that country to the United States, "has been traditionally a market for consumers' goods of all kinds. We have bought manufactured products from the United States, and from other countries, many of which we could have easily produced on an economic basis, had we had the necessary machinery and technical skill.

"We believe that this situation must undergo substantial changes. Henceforth, we shall do everything possible to become, in the main, a market for producers' goods and for such consumer goods as we cannot produce on a sound economic basis."

Dr. Benjamin H. Hunnicutt, president, Makenzie College, San Paulo, Brazil, recently presented and answered the following questions with regard to industrialization in that country.

"Will the increased industrializa-

tion of Brazil take away from the United States its market?"

"I do not think so. I think as the standard of living rises, instead of the United States selling less to Brazil, you will sell more. You may not sell exactly the same articles as you did in the past. Some articles may now be manufactured in Brazil, by Brazilians, of their own make and patterns. Many things will be marketed just as they are in the United States by local factories in Brazil. But other lines that you manufacture in the United States will have a ready market in Brazil."

Industrialization abroad need not be alarming to Americans. In fact, industrialized nations have been known to purchase larger totals of our goods than those less developed along such lines. Countries able to support industrialization are automatically buyers of much of our raw materials, semi-finished products and parts as well as manufacturing and distributive equipment of all kinds.

Industrialization simply means that a foreign country tends to buy more durable goods, products that can be used for local manufacture, rather than use the money it receives for exports to buy consumers goods.

Such a policy if the result of natural economy, tends to raise the general standard of living. Only as it is artificially stimulated by exorbitant tariffs resulting in prices out of proportion to worldwide conditions, does industrialization acquire unsatisfactory symptoms from the viewpoint of other exporting countries and also of the nation sponsoring such a type of uneconomic development.

The Washington Slant

On Distribution

(Continued from page 27)

the spread in some parts of the chain, and place more control over mark-ups. It is their opinion that in the beginning there inevitably will be friction between some of the links of the chain, but that intelligent discussion will soon bring home the realization that activation of the concept throughout is good business, purely as business, aside from its social implications. You find here in Washington a widespread hope that discussion of the idea of the inter-relation of the parts or links in the distribution chain will hasten efficiencies and economies in all brackets.

WPB Achievement

Donald Nelson, who directed the War Production Board through its great period, and who breathed into it the life that made it function, points out that the sole purpose of the existence of WPB was production concurrently with distribution, in the sense outlined in Mr. Lea's remarks. WPB had an organization of super-experts who brought the ores and minerals out

of the earth, the timber from the forests, the produce from the farms, and even made the waters and the atmosphere yield things, all of which were distributed by all known means to the places where they were processed, fabricated, and packed, while simultaneously the vast transactions were safeguarded and financed, and all the various provisions were made for warehousing in all parts of the globe, as well as at home. In many instances there were actual marketing functions direct to consumers, as well as to other users. And with all this went the necessary provision of servicing and maintenance.

The basic story of WPB is a record of brilliant accomplishment of almost incredible feats in distribution in its broadest sense. The men and women under the inspiration of Donald Nelson, whether conspicuous or inconspicuous, and despite tangles, upheavels and inconsistencies, made world history, in the economic sense, just as novel and sweeping and epochal as the

military and naval history made in Europe and Asia.

The history of the WPB is now being written. It will be a story of the miracles of distribution in the larger sense. The records, not yet available to the public, will be a great source of information for all who are interested in more scientific integration of the overall mechanism of distribution. The history of WPB should be the source for many text books on the subject of distribution as it crystallizes in the future.

Rapid Transportation

Col. John S. Cooke, associate director, Office of Surplus Disposal, Reconstruction Finance Corp., was the man assigned by the army to WPB to expedite production. Col Cooke says it was his job to push distribution rather than production. As a striking instance he mentioned the time he had to fly to China to see that tungsten was taken from its source, loaded on aircraft, flown over the Pacific to the United States, and apportioned to those who had to do the processing. Thereafter he had to supervise the distribution among those who used it in the manufacture of the sorely needed things required by the army. It was Col. Cooke's job to see that the distribution was facilitated by the swiftest transportation, that the tungsten and its products were properly protected and warehoused, and that there were no delays by reason of inadequate manpower or financing. He not only looked after the proportionate spread, or allocation, of the material and the products made from the material, but he followed through to see the packing and packaging was done properly and quickly, and kept on the trail until the products with the precious tungsten fabrications were started toward their ultimate destination.

(Continued on page 89)

New Distribution Center

The Smedley Co., in the storage business in New Haven for 85 years, has taken over on a rental basis from New Haven Terminal the one-story structure at the outer harbor pier and has converted it into a warehouse of general merchandise.

Architects are designing for New Haven Terminal a waterfront merchandise warehouse, which is expected to be in operation within three or four months, and which the Smedley firm will operate on a long-term lease. The new warehouse will be a streamlined one-story structure, built on recommendations of the Bureau of Foreign and Domestic Commerce, Department of Commerce. Along

one side will be tracks and private sidings of the New York, New Haven and Hartford Railroad. Another side will have motor truck docks. All merchandise, it is said, will be handled on pallets and all physical operations will be mechanical.

The Smedley Co. has a contract for pick-up and delivery service in the New Haven area for American Airlines, the New York, New Haven and Hartford Railroad and the Universal Carloading Co.

Officers of the firm are Harry Smedley, president, and Edgar C. Palmer, secretary-treasurer, manager and operating executive. David C. Heffernan is traffic manager.

People in Distribution



TRANSPORTATION

The Interstate Commerce Commissioner **George M. Barnard** as chairman for 1946. Under the commission's system of rotating the chairmanship yearly, Commissioner **J. Monroe Johnson**, also director, ODT, would have succeeded to the office next year, but he felt his ODT duties made it impossible for him to take on the additional work. Commissioner Barnard is from Indiana. President Roosevelt nominated him on May 31, 1944, to be an ICC member to complete the unexpired term of the late Joseph B. Eastman, ending Dec 31, 1950.

Robert S. Kirksey has been named president, Fruehauf Trailer Co. of California, and **Walter J. Pickhardt**, vice president and general manager. Mr. Kirksey formerly was vice president and general manager, and Mr. Pickhardt, sales manager of the trailer firm's western division. (Kline)

William J. Cumming, former chief, maintenance section, ODT, has been appointed superintendent, field service operations, White Motor Co., Cleveland. (Kline)

National Truck Leasing System, with headquarters at 540 N. Michigan Ave., Chicago, has retained **Martha Dunlap** as executive secretary to further implement the nationwide truck-leasing service offered by this organization. She was formerly editor, *The Furniture Warehouseman*, official publication, National Furniture Warehousemen's Assn.

John S. Gorby, formerly Naval Air Traffic Coordinator, Pacific forward area, has returned to Railway Express Agency and has been named superintendent of public relations.

A. L. Paquette has been appointed manager, aviation section, marine sales department, Westinghouse Electric Corp., East Pittsburgh, Pa. The section was formerly part of the industry sales departments.

Col. Jess B. Bennett, former sales executive, Curtis Publishing Co., Philadelphia, has joined Braniff Airways as director of research and planning, after five years of military duty. (Kline)

William Fetting has retired as fleet engineer, Pickands, Mather & Co., Cleveland, operating managers of Interlake Steamship Co., and **George Manthey**, his assistant, succeeds him.

W. R. Beattie, a traffic executive, Braniff Airways, before three years of service in the navy, now heads Braniff's new Interline, Agency and Foreign Sales Department.

William J. Cumming, former chief, maintenance section, ODT, has joined White Motor Co., Cleveland, as superintendent, field service operations.

Highway Trailer Co., Edgerton, Wis., announces the appointment of **James E. Bardin** as Chicago branch manager, sales department. Under Mr. Bardin's direction, service facilities are being augmented by extensive purchases of modern equipment. **Joe Daniels** is the newly appointed service manager.

MARKETING

George D. Shaeffer, formerly chief engineer, Gar Wood Industries, Inc., has been elected vice president in charge of engineering. **W. H. Hammond** has been promoted to vice president in charge of sales.

Marcel F. De Muller has been appointed sales manager, Willys Export Corp.

C. B. Smythe, Elyria, Ohio, has been elected president, The Thew Shovel Co., Lorain, Ohio.

Curtis L. Peterson has been appointed supervisor of advertising, domestic appliance division, The Pressed Steel Car Co.

Leon Wm. Morse, who was general traffic manager, Food Fair Stores, Inc., Philadelphia, at the time of his induction into the armed forces, recently has been released from the transportation corps. He is now president of Hy-Grade Bag Co., Inc., Brooklyn.

Board of Directors of Walter Kidde & Co., Inc., have announced **Paul W. Eberhardt's** election to the office of a vice president. His principal duties will include management of domestic sales of the company's fire-fighting equipment in aviation and general industry, together with general supervision of field selling activities.

Ray L. Morrison heads the new brake division, The Timken-Detroit Axle Co.

Ray W. Turnbull, president, Edison General Electric (Hotpoint) Appliance Co., has been elected vice president, National Electrical Mfrs. Assn. He is a member of the board of governors of the association.

Charles G. Roberts, Schenectady, N. Y., has become manager, merchandise sales, International General Electric Co., responsible for overall direction, appliance and merchandise, electronics and refrigerator, and air conditioning divisions. **F. L. Maggini** has been named manager, refrigeration and air conditioning division, and **R. P. Davidson**, acting manager of the electronics division. (Kline)

Nathaniel Warshaw, well-known specialist and consulting engineer in materials handling, is now head, materials handling division, Market Forge Co., Everett, Mass.

Election of **Ralph E. Kramer**, internationally known industrial marketing and sales executive, to vice president in charge of sales, Hammond Iron Works, Warren, Pa., has been announced.

WAREHOUSING

Frank E. Kearney, general sales manager, Lehigh-Lackawanna Warehouse Organization, was installed recently as 23d president, Traffic Club of Jersey City, N. J. He is a former president of the Newark Traffic Club, Newark, N. J. Other officers include: **E. A. Meyer**, t.m., American Home Products Co., 1st v.p., and **C. S. Langen**, t.m., Republic Carloading & Distributing Co.

National Terminals Corp., Cleveland, is reopening its New York sales office and has appointed **Herbert J. Lushbaugh**, formerly associated with Interlake Terminals, as New York salesman.

George G. Roddy, former chief, merchandise warehouse section, division of storage, ODT, has resumed his duties as vice president and general manager, Interlake Terminals, Inc., New York. He left Interlake in June, 1942, to join ODT, where he specialized in establishing warehouse locations for all government agencies.

M. J. Tanzer has been named assistant general manager, Cleveland Stevedore Co., Cleveland. **Carroll Priest** has been named general superintendent of marine terminals and warehouses there. (Kline)

Sidney J. Wald, who before the war was associated with his father, **Max Wald**, in the Wald Transfer & Storage Co., Houston, Tex., has received an honorable discharge from the Marine Corps, and has returned to the Wald

company. He has been elected a director-at-large of the Houston Freight Carrier's Assn.

George D. Liles has been elected vice president, Merchants Refrigerating Co., and will have charge of operations in Buffalo, N. Y. The company's warehouse, cold storage plant and lake freight terminal in Buffalo, were formerly owned by the Terminals & Transportation Corp.

Amos E. Brooks has resumed his duties as secretary-manager, Southwest Warehouse and Transfermen's Assn. He was granted leave of absence to enter the armed services May, 1942. Since then, he has served both in the ordnance and engineer corps.

The following officers have been elected by the Central New York Warehousemen's Club: president, Ken Conklin, Conklin Warehouse, Binghamton; vice president, Frank Trossett, Broad Street Warehouse, 700 Broad St., Utica; treasurer, Harold Jones, Jones-Clark Trucking Co., 135 Hotel St., Utica; secretary, Frank A. DeVall, 9 Campion Rd., New Hartford.

The Chain of Tidewater Terminals & Inland Warehouses, comprising public, field and management warehouse and terminal companies, announce that Leo J. Coughlin, former colonel, army transportation corps, is again associated with the group.

A group of business men, recently released from the army, have organized an advisory service for industry known as Mechanical Handling Techniques, Inc., with offices at 17 State St., New York 4, under direction of Col. William C. Crosby, a former director, storage division, Army Service Forces; Col. Leo J. Coughlin, former chief, transit storage division, Transportation Corps; Brig. Gen. Andrew F. McIntyre, recently chief, rail division, Transportation Corps; and Lt. Col. Robert G. Stone, formerly chief, operations group, transit storage division, Transportation Corps.

Obituary

Benjamin A. Van Tassell, 85, a retired assistant treasurer of the Erie Railroad, in New York.

Sidney Keller, 72, who has been in the transfer and trucking business in Grand Rapids, Mich., 20 years.

William Robert Taylor, 71, owner and operator, Security Transfer and Storage Co.

Col. Willis C. Bickford, 59, general manager and chief engineer, Port of Seattle, and one of the leading advocates for Northwest Airlines gateway to the orient. (Haskell)

A. Frank Gilbert, 74, who retired in 1940 after being with the American Steel and Wire Co. for 40 years.

George F. Downey, 96, who was associated for 35 years with the former Washington Storage Warehouse in New York City and conducted a similar business in Yonkers for 13 years until he retired in 1937.

James Gallagher, Jr., 50, owner, Gallagher's Warehouses, Philadelphia, and president, Associated Warehouses, Inc., Chicago. He spent his lifetime as a warehouse executive in the firm that has been in possession of his family for 80 years. He also was owner and president of James Gallagher, Inc., which operates Philadelphia Motor Express Terminal and several fleets of trucks.

C. A. MUSSELMAN

C. A. Musselman, president, Distribution and Warehousing Publications, Inc., and chairman of the board, The Chilton Co., publishers and printers, died Jan. 3 in Presbyterian Hospital, Philadelphia, after a long illness. His age was 73.

He became president of the automotive unit of The Chilton Co. in 1923 after having served as secretary-treasurer for a number of years. He was elected president of The Chilton Co., of which Distribution and Warehousing Publications, Inc., is a subsidiary, in 1934. He retired from the presidency in 1945 to become chairman of the board.

Considered by many as one of the outstanding business paper publishers of his generation, Mr. Musselman had served as president of the Associated Business Papers and as a member of the board of directors of the National Publishers Assn. He also was an active member of the Society of Automotive Engineers.

Books and Catalogs

17th Boston Conference on Distribution. 87-p. report, review of speeches "appraising economic trends affecting business of distribution," at Boston national forum in October. \$3.75, postpaid. Boston Conference on Distribution, 80 Federal St., Boston 10, Mass.

Future of American Merchant Fleet. 30-p., illustrated; reviewing varied history of merchant fleet; problems to be faced. Westinghouse Electric Corp., Box 868, Pittsburgh, Pa.

Plylock Belt Joint Method. Illustrated, step-by-step description of making rubber belts endless by Plylock method. B. F. Goodrich Co., Public Relations Dept., Akron, Ohio.

Air Transportation, Yesterday, Today and Tomorrow. 11-p. booklet reviewing war record piled up in passenger, cargo miles in aviation; marking possibilities in new era. Air Transport Assn. of America, 1515 Massachusetts Ave., N.W., Washington 5, D. C.

Bulletin 141. 4-p. folder; description of Lyon-Raymond portable hydraulic elevating tables. Lyon-Raymond Corp., Greene, N. Y.

New Products

(Continued from page 65)

the calcium and magnesium, which always precipitate soap enter into chemical combination with the synthetic detergent and become aids rather than an obstacle to cleaning.

Nacconol, we are told, possesses unusual metal cleaning properties which are finding increasingly wide application in industry. Extensive use was made of it during the war as a means of securing absolutely oxide-free aluminum surfaces required in the mass production of welded bombers and other planes.

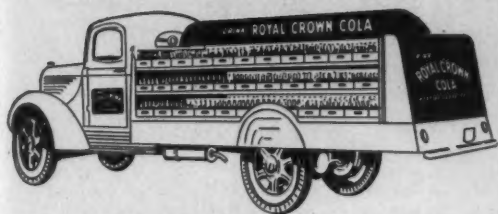
The versatility of Nacconol has been demonstrated in many fields. It has been used successfully in street sprinklers in the proportion of 5 lb. per 2000 gal. of water to give greatly improved street cleaning action and when so used is reported to improve traction and thus prevent car skiddings on freshly wetted streets. It is used as a wetting agent in insecticide and fungicidal sprays and in the acid washing of fruits to remove spray residues. Nacconol is becoming entrenched in the agricultural field. In this connection, another use is in the washing of fresh fruits and vegetables prior to canning or quick freezing.

It has found several important uses in the paper and pulp industry in conditioning paper machine felts; in making paper softer and more absorbent, and in connection with the washing procedure of unbleached pulp, rag and paper stock prior to bleaching.

Its use is said to increase the petroleum yield of oil-bearing sands. Used in conjunction with gypsum and Portland cement, it is said to make plaster board and concrete stronger. It helps in the wetting and trapping of dust in air-conditioning systems; eliminates troublesome "air-bells" on photographic plates and films and, when used as a dog shampoo, will kill fleas and lice. Another important use is its ability to prevent standing paint, once the container has been opened, from "skinning" over.

"Run" a Complete...

ADVERTISING PROGRAM ON YOUR TRUCKS



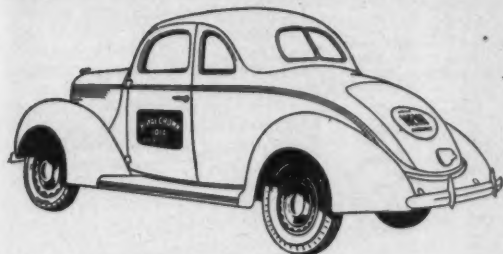
BEVERAGE TRUCK

Effective use of top-panel, rear and cab door of "special body" trucks.



PANEL TRUCK

This body style affords an ideal utilization of side panel, rear and cabs.



PASSENGER COUPE

Even sales or business cars offer an excellent spot advertising opportunity.



TOP OF CARS AND TRUCKS

Truck-top advertising is becoming popular in "tall-building" areas.

with **MEYERCORD TRUCK DECALS!**

Observe the effective, non-cluttered use of space as shown in Royal Crown's *complete* Meyercord Truck Decal advertising program. Then remember that the *space* is free. It doesn't cost you a cent. Utilize these or similar areas on your own trucks with Meyercord Decals for lasting, colorful "selling on the run." Meyercord Truck Decals are economical for a dozen trucks or a thousand. They're durable, washable, weather-resistant and can be made in any colors, size or design. Over-

night application saves off-the-street time . . . and they stay "put." Free designing service. Ask for details. Address inquiries to Dept. 30-1.

FREE! TRUCK VISUALIZER

Contains helpful hints on lettering decorating; with outline diagrams for experimental designing of many body types—from panel deliveries to vans and tank trucks. Send for your free copy . . . **TODAY!**



THE MEYERCORD CO., 5323 WEST LAKE STREET • CHICAGO 44, ILLINOIS

Getting Down to Cases In Distribution



FINANCE & INSURANCE • HANDLING & TRANSPORTATION
PACKING & PACKAGING • WAREHOUSING & MARKETING

By LEO T. PARKER
Legal Consultant

WAREHOUSING



ACCORDING to a late higher court decision, the owner of stored goods is not bound by a liability limitation clause printed on a warehouse receipt unless the owner in some manner assents to the limitation.

In *Colgin v. Security Storage & Van Co., Inc.*, 23 So. (2d) 36, La., the testimony proved that a cedar chest was delivered to a warehouse. The warehouse company office manager was present when the cedar chest was received, and on the same day he mailed a warehouse receipt to the owner's wife. On the face of the warehouse receipt was printed in small type a limitation clause to the effect that the owner "declares that the value of any article, piece, package . . . does not exceed the sum of fifty dollars . . . unless the owner declares a greater value in writing, and agrees to pay an additional charge of . . . cents per month for each \$100.00 or fraction thereof in excess of the sum above declared."

The cedar chest and contents were lost while in storage, and the owner sued the warehouse company for \$709, the actual value of the chest and contents.

Notwithstanding the above limitation clause the higher court held the warehouse company liable for full value of the chest and contents. This court said:

"The receipt is not labeled as a contract. In the present case, the warehouse receipt was mailed subsequent to the deposit. . . . The limiting clause was not brought to the attention of the depositor, and we are at a loss to see how he could be charged with consenting to a limitation of defendant's (warehousemen's) liability."

MARKETING



WHEN a purchaser defaces or changes a chattel mortgage without consent or knowledge of the seller, the purchaser is liable in damages to the seller.

In *Wald v. Automobile Brokers, Inc.*, 160 Pac. (2d) 400, Okla., it was shown that a purchaser signed a contract to purchase an automobile with a small down payment.

Later, it was discovered that someone had inserted in the mortgage a

claim which gave the purchaser nine months "extension" on all payments.

Although no definite proof was presented by the seller that the purchaser had inserted this clause with intention to defraud, the higher court held the seller entitled to rescind the contract, and also to recover damages from the purchaser.

Goods Accepted

A purchaser who accepts merchandise in the knowledge that the seller did not comply with the terms of the original contract of sale, cannot recover damages from the seller.

In *McGee v. Bennett*, 33 S. E. (2d) 577, Ga., it was shown that a seller delivered merchandise to a purchaser contrary to the terms of the contract. The purchaser was aware of this discrepancy but he accepted delivery. Later the purchaser sued the seller for damages. The higher court held the seller not liable, saying:

"If the purchaser orders one article, and another and a different article from that ordered is delivered, and the purchaser knows this and accepts this article, . . . he cannot recover."

TRANSPORTATION



ALL transportation contracts in violation of rates authorized by legal commissions are void.

In *Butler v. Bell & Refining Co.*, 161 Pac. (2d) 559, Cal., a common carrier sued an oil company to recover the difference between the transportation rate prescribed by the state railroad commission and a lower rate accepted by the carrier when transportation service was rendered.

The court held that the contract was void by which the carrier agreed to transport oil at a rate lower than the legal rate. The court said:

"The fact that the shipper has to pay the difference between a legally established rate and a lesser rate for which he was able to bargain privately, does not mean that the shipper is being regulated."

Valid Rates

Freight rates established by authorized public authorities are valid and effective, unless testimony is given that such rates are unreasonable and unjustifiably high.

In *Ashland Co., Inc., v. U. S.*, 61 Fed. Supp. 708, a company sued the government to set aside an order of the Interstate Commerce Commission

which denied the company rebates on freight charges.

The company failed to prove that the freight charges were unreasonable. Therefore, the higher court refused to allow the company any rebate.

Must File Suit

In *National Carloading Corp. v. Atchison, T. & S. F. Ry. Co.*, 150 Fed. (2d) 210, the evidence showed that there was collusive agreement between employees of a carrier and of a freight forwarder that two 40 ft. cars would be furnished whenever the forwarder ordered a 50 ft. car.

The court held that it was the duty of the carrier to bring suit for the undercharges.

Discrimination

In *C. & D. Motor Delivery Co. v. U. S.*, 150 Fed. (2d) 250, it was shown that payment was made by a motor carrier to a shipper's representative for services in concentrating a shipment at one delivery door.

The higher court held that the carrier was precluded by its tariff from performing this service for shippers, as it was a "concession received" in violation of the statute against receiving rebates, concessions, or discriminations.

FINANCE and INSURANCE



ALTHOUGH an insurance policy clause states that the insurance company will not be responsible for death of employees of independent contractors, the insurance company is liable if the accident was caused by any thing or conditions on the premises of the insured.

In *Gulf Co. v. Indemnity Co.*, 149 Fed. (2d) 196, it was shown that a company carried an insurance policy by the terms of which the company agreed to defend all suits, except suits for injury or death caused by work of an independent contractor and his employees.

Certain employees of an independent contractor were killed on the premises of the company when a current of electricity jumped from high tension wires.

The court held the insurance company bound to defend the suit and to pay compensation.

3 MARKS OF QUALITY

1. SAFETEX printed on every core assures tape made from tough, best quality Northern Kraft.
2. The Pull-tab opener found only on SAFETEX. It saves users time and tape.
3. SAFETEX grooved gumming, with its exclusive herring-bone design means tape that sticks faster, holds tighter.

These three distinctive marks of quality ensure a product combining all the qualifications for a perfect sealing tape.

For a tape that does the job — use SAFETEX. Write for nearest paper merchant distributor.

CENTRAL PAPER COMPANY
MENASHA, WISCONSIN

SAFETEX
GUMMED TAPE
PULL-TAB OPENER
SAVES TIME AND TAPE

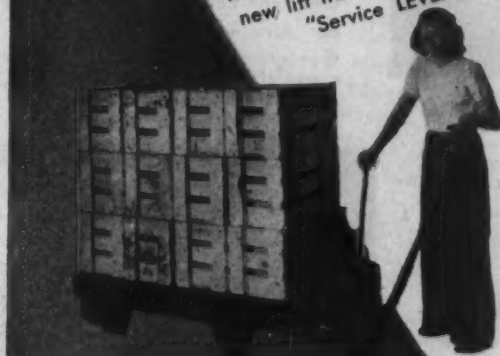


30 lbs.
LIFTS
6000

SERVICE LEVERLIFT HYDRAULIC LIFT TRUCK

This is the modern—the practical—the low cost way of handling heavy loads. Slip a service LEVERLIFT under a loaded skid or pallet. A few easy strokes of the handle, and up go 3 tons off the floor, ready for a quick trip.

Quickly maneuverable in 'tight corners' . . . built to take day-in, day-out pound-lifting and lowering mechanism . . . these are points to have in your new lift trucks. To get them, say "Service LEVERLIFT."



SERVICE CASTER & TRUCK DIVISION of Domestic Industries, Inc.

517 N. Brownwood Avenue, Albion, Michigan
Eastern Factory: 432 Somerville Ave., Somerville (Boston) Mass.
Toronto, Canada: United Steel Corporation, Ltd., SC&T Co. Division



SERVICE

POWER LIFT TRUCKS
MANUAL LIFT TRUCKS
LIFTERS • CRANES
TRUCKS & TRAILERS
DOLLIES • SKIDS
CASTERS • WHEELS

Weld-Bilt

is the **BETTER** Way
to Lift or Transport
Your Materials . . .

Whatever your handling requirements may be, the WELD-BILT engineer can size up and recommend the equipment that will perform the work with dispatch and economy. Every WELD-BILT unit is designed and constructed for all-around service, convenience, and low maintenance cost, year in, year out. Used and recommended by industrial plants everywhere.

Portable Elevators—Hydraulic Lift Trucks
2 and 4 Wheel Trucks—Tiring Machines
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The WELD-BILT
Hydraulic Lift Truck



WELD-BILT
PORTABLE ELEVATOR

Your request will bring
illustrated folder cover-
ing all types of WELD-
BILT Equipment.

WEST BEND EQUIPMENT CORP.

231 Water St., West Bend, Wis.
Materials Handling Engineers

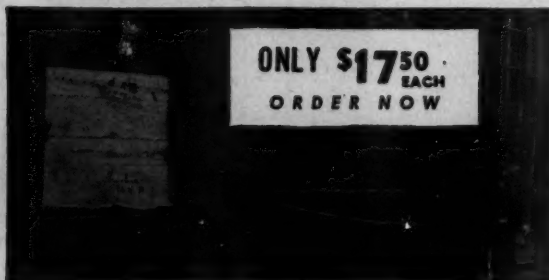
Death Defier

The MONARCH

ONE MAN CAR DOOR OPENER

One man can open the most binding, balky, box car door with the Monarch Car Door Opener. Get greater safety . . . speed loading and unloading schedules . . . order an ample supply to fill your needs today!

- No strained muscles.
- No slips or falls.
- No broken arms, legs or mashed fingers.
- No fatalities.
- No time wasted.
- No "gangs" needed.
- No time lost.



ONLY \$17.50 EACH
ORDER NOW

MINING SAFETY DEVICE COMPANY

DEPT. DA, BOWERSTON, OHIO

Partnership

When a person represents himself as a partner, he thereby induces credit to the partnership and he is legally liable as a partner whether or not he is a partner.

In *Firestone v. Webb*, 182 S. W. (2d) 941, Ark., it was shown that a man named Daniel signed a financial statement given by the operator of a business. Later, a seller sued Daniel, who claimed that he was not liable because he was not a legal partner. However, the higher court held Daniel liable.

Income Taxable

A modern higher court has held that where a corporation sells an asset to a stockholder for less than its market value, the difference between the sale price and such market value must be included in the gross income of the corporation.

In *Palace v. U. S.*, 148 Fed. (2d) 30, it was shown that a corporation leased its sole asset to a majority stockholder for 10 years. The latter assigned the lease to a corporation whose majority stockholder owned the remaining stock in the lessor corporation which assumed all obligations of the lessee under the lease and agreed to pay \$5,000 annually.

The higher court held that all payments made by the assignee under the lease and assignment constituted gross income taxable to the lessor corporation.

PACKING and PACKAGING



ALL packers of food, and other products, who strictly comply with existing laws cannot be held liable for violation of anti-trust laws.

In *Willard Canning Co. v. American Can Co.*, 22 So. (2d) 461, it was alleged that the American Can Co. sold cans in Texas for less than in Florida in violation of the federal laws, such as the Clayton and Robinson-Patman Acts.

The higher court held that the American Can Co. had not violated these laws.

Trademark Law

No company may register in the United States Patent Office a trademark on packed goods likely to confuse the buying public.

In *Waldport Seafood Co., Inc., v. Coe*, 60 Fed. Supp. 990, the Waldport Seafood Co. applied for registration of a trade-mark "Pacific Spray" for canned crab meat.

A cranberry canner objected to such registration because he had been using the trade-mark "Ocean Spray" for canned cranberries.

The higher court held that Waldport Seafood Co. could not legally register its trademark because canned crab meat and canned cranberries are goods of the same descriptive properties.

Warehouse Merger

Terminals and Transportation Corp., Buffalo, N. Y., has been consolidated with and will be operated as a division of Merchants Refrigerating Co., 17 Varick St., New York.

Name Changed

Nationwide Moving and Storage Corp. has become the successor to O.K. Storage and Van Co., Inc., Shreveport, La., according to a recent announcement by I. A. Faulk, president.

Meets Feb. 19

The annual meeting of Interlake Terminals, Inc., has been scheduled for Feb. 19 at the Edgewater Beach Hotel, Chicago, announced William G. Tanzer, president, recently.

FOR SALE

One type L.U. economy ball-bearing lifter; 7 1/2 ft. per min.; narrow front gauge. Capacity 2,000 lbs. Complete with 1/2 h.p. motor, 110 volt, 60 cycle, 1 phase. Used only short while.

Address Box 8-940, DISTRIBUTION AGE
100 East 42nd St., New York 17

SITUATION WANTED

New York terminal and warehouse manager now available. Experienced railroad, trucking and industrial traffic manager. Has handled details, solicitation, dispatching. Excellent executive background.

ABSECK, 157-28 Twelfth Road
Whitestone, New York

POSITION WANTED

Traffic manager or assistant; 25 years experience in large railroad traffic department. New York or vicinity preferred.

Box V-394, DISTRIBUTION AGE
100 East 42nd St., New York 17.

**HERE'S A WAY
TO REDUCE
PRODUCTION
COSTS . . .**



**Coordinated HANDLING
WITH ROSS STRADDLE CARRIERS
AND LIFT TRUCKS . . .**

A fast, smoothly operating, economical handling system helps to reduce production costs, widen profit-margins . . .

Coordinated use of ROSS Straddle Carriers and Heavy Duty Lift Trucks for moving materials of nearly every type, size and shape in unit-loads effects reductions in handling costs unsurpassed by any other method.

INVESTIGATE the proven advantages of ROSS
Straddle Carriers and Heavy Duty Lift Trucks—

BUILT FOR THE BIG JOBS.



Let ROSS engineers and representatives show you why these fast, rugged machines are the last word in economical materials handling.

**WRITE TODAY FOR
BULLETIN DA-16**

THE ROSS CARRIER COMPANY • Benton Harbor, Michigan
Direct Factory Branches and Distributors Throughout The United States and Canada





Heavy duty, anti-friction bearing equipped machines with 30" width belts—in 20, 25, 30, or 35 ft. lengths. Ample head and side clearance for large packages. Gasoline or electric motor drive.

Catalog and prices on request

GEORGE HAISS MFG. CO., INC., Canal Place & E. 144 St., New York 51, N. Y.



This new Bassick Caster is an improved type especially for service on power-pulled trailer trucks. It has . . . $\frac{1}{2}$ " diameter balls rolling, in machined raceways, on a $\frac{1}{2}$ " diameter ball race. Timken roller thrust bearing. Heavy gauge steel plate in frame and top plate. Heavy-duty semi-steel or iron

core rubber-tread roller-bearing wheels. Alemite pressure lubrication. Bassick Trailer Casters come in 3", 10" and 12" sizes, with either standard or "Floating-Hub" (shock-absorbing sprung wheel) construction. Swivel or rigid type. Write us.

Bassick . . . MAKING MORE KINDS OF CASTERS . . . MAKING CASTERS DO MORE

THE BASSICK COMPANY, Bridgeport 2, Connecticut

Division of Stewart-Warner Corporation

Canadian Division: Stewart-Warner-Alemite Corp., Ltd., Belleville, Ontario

Distribution and Employment

(Continued from page 32)

the practices of research in management are not grounded on engineering fundamentals. Also the personnel selected for the task are often inadequate for the development of the required facts or the practical application of such facts to the immediate and future problems of corporate policy.

Herein the engineer has a great opportunity for the application of the scientific principles of his training. The need for engineering trained personnel will be unusually large in the years ahead and administration will benefit by the service that can be rendered.

There is a great contrast between the scientific control of processes of production and the rule-of-thumb which is present in almost every step in the chain of distribution.

Let's see if we are alone in this thought. Robert M. Gates, in his brilliant 1944 A.S.M.E. Presidential Address, "Engineers of Tomorrow," has this to say:

"Engineers have developed for industry an almost unlimited capacity to produce. The productivity we create demands open channels of distribution. Surely engineering techniques need to be applied there. Our obligation to industry includes the whole process."

As the literate chairman of the board of an outstanding company, American Machine & Foundry Co., Morehead Patterson tells us:

"Where you see the fine uniting of sales and engineering techniques that you do in our most progressive companies, you will find the unit cost of distribution coming down just as production costs have done in the past. This is the new challenge and opportunity to industrial management as it faces the great task of the postwar period."

Finally it boils down to this. Management can no longer afford many opportunities to speculate on its decisions. Taxes and other costs do not permit such speculation. Management must be close to being right the first time. It must have facts and must know how to

use them, particularly in distribution.

There are two basic points that make distribution, in its broad sense, of vital importance to every businessman:

a. Constant improvement in manufacturing methods must be matched by constant improvement in distribution practices.

b. We must preserve every necessary function of our distribution system. On the other hand, we must improve the hit-or-miss practices in every stage of distribution that clutter up the economic highway between the factory and the consumer. The complacent acceptance of unscientific methods in many wholesale and retail functions, transportation, warehousing, and other activities of distribution directly adds to costs.

Wasteful hit-or-miss practices in distribution can be eliminated by the practical application of methods that made the miracles of production possible—by the scientific employment of engineering principles.

Washington Slants

(Continued from page 80)

Senator Arthur Capper, the oldest man in the Senate, and the second in length of service in the Senate, over 80, and yet amazingly alert and vigorous, has a grasp of the subject as a business man. He owns three dailies, two weekly agricultural papers, one with the largest circulation in the United States, one family periodical with 2,000,000 circulation, a radio station and has other large business interests. The Senator thinks a broader concept of distribution is greatly needed in the period ahead, not only here, but all over the globe. The war has left the delicate and extremely complex economic mechanism of the world badly awry and unhinged. There is a global vacuum in materials, services and products which must be restored with the help of an idea such as is manifest in the new concept of distribution. He sees

this concept as one of the great approaches to essential adjustment.

Representative Luther Patrick, Alabama, one of the most keen-minded members of the Interstate and Foreign Commerce Committee, points out that our own basic raw materials have diminished to an extent that forces consideration of the need for intelligent conservation. We have drawn upon this irreplaceable capital without much thought about the future. We have been accustomed to think the supply was inexhaustible. Mr. Patrick, a shrewd businessman from the steel center of Birmingham, thinks that the new concept of distribution should be applied also to a more intelligent use of the materials and resources we must now measure and use with clear foresight and plan.

Nelson A. Miller, manager, Distribution Division, Bureau of For-

Keep Goods Moving

WITH THE CARGOCRANE

GET A
POWERFUL
LIFT
WITH A
LINK-BELT
SPEEDER



Eliminate traffic jams on docks, platforms, in warehouses and yards, by loading, unloading, and handling materials with a Link-Belt Speeder CARGO-CRANE! This nimble machine has power and speed, gets in and out of narrow spaces, turns on the proverbial dime, and handles with fingertip ease thanks to full hydraulic control.

Rapid, easy handling at terminals and transfer points cuts costs all along the line! There is a CARGOCRANE to fit your needs. Write for details, today!

LINK-BELT SPEEDER

Builders of the Most Complete Line of
SHOVELS-CRANES-DAGLINES
LINK-BELT SPEEDER CORPORATION, 381 W. PENSING ROAD, CHICAGO 9, ILL.
A DIVISION OF LINK-BELT COMPANY

REVOLVATOR

REG. U. S. PAT. OFF.

PORTABLE ELEVATORS

EASIEST TO OPERATE

Jones (real name on request) installed in his own factory four portable elevators each made by a different company. After a thorough trying out in the actual service called for he took a vote from all concerned. The verdict was REVOLVATOR "because it is the easiest to operate."

Numerous other letters testify to REVOLVATOR preference for many reasons. They all add up to savings in operating costs—an important item in this post war era.

SALES AGENTS: At present we have a few choice territories open.



Piling Paper in Conjunction with Red Giant Lifttruck.

REVOLVATOR Co.

DESIGNERS AND MANUFACTURERS OF MATERIAL HANDLING EQUIPMENT

396 86th St.

NORTH BERGEN, N. J.

Since 1904

Not merely built, but

Engineered for Utmost Safety.

● The very dangers which most often threaten life, limb and load simply don't happen when you use ACLC Safety Hoist Hooks.

Makeshift mousing gives place to automatic mousing. Snagging can't occur because no protruding point "asks" for it. Hook straightening and load slippage are avoided because the patented shoulders and lip LOCK the load in perfect alignment.

Time saved — men spared — cleaner jobs; hence more profit. Send for details Now!

American CHAIN LADDER CO., INC.
151 East 50th St., New York 22, N. Y.

ACLC Safety Hoist Hooks are manufactured in three models—Eye Type, Shackle Type, Shank or Clevis Type.

ACLC Safety HOIST HOOK



Foreign and Domestic Commerce, Department of Commerce, considers the broader concept as desirable in relation to the functions of marketing, in the control of stocks, and sees it as important in the problems connected with the organization of distribution. He suggests it might be considered as something that veterans might contemplate, since veterans will have a large part in moulding the world of the future. Mr. Miller thinks also that it may be a system the schools might incorporate for study and discussion by students interested in selling and production.

Murray's Opinion

Senator James E. Murray, Montana, whose name has become synonymous with small business because he is the head of the Senate Smaller Business Committee, has given considerable study to the subject of distribution. Senator Murray is a wealthy man who seeks to find a balance in the economics of our national life. He points out that the Ford Motor Co. has practiced integration in distribution, from raw materials to finished products. But he is not convinced that this example proves the point. The explorations of the Murray Committee tend to lead its members to the conclusion that great economic units, such as Ford and Alcoa, in aluminum, while integrating all the parts that are involved in the broader concept of distribution, seem invariably to eventuate in monopolies that squeeze out competitors, large and small. It is pointed out that these monopolistic tendencies developed with particular sharp definition during the war.

The major premise of integration for broader and more intelligent distribution is considered sound and incontrovertible. The problem, as it appears to the Murray Committee, is to devise the safeguards to preserve the individual integrity of the parts, and to prevent the establishment of monopolies. The question is, how to obtain the necessary coordination and cooperation with a minimum of regulation.

Materials Handling

(Continued from page 45)

sible future industrial expansion of a number of our large industries, it was felt that materials handling equipment manufacturers would produce more than \$100,000,000 worth of equipment a year, for the next two or three years. Depending upon changes in design, the development of new ideas in equipment, and other changes that will occur, there is no reason why this volume should not continue, or even increase, as long as we have industrial prosperity.

To try to list the manufacturers who compose this important industry is rather difficult, because it covers such a wide range, and they are spread all over the country. In some instances, materials handling equipment is confined to one branch and represents only a portion of the firm's production. However, in considering this as a \$100,-

000,000 industry, we take into consideration the manufacture of the following:

Industrial casters, wheels, two-wheel and four-wheel hand trucks, industrial power trucks, industrial tractors and trailers, various types of chutes, gravity conveyors, belt conveyors, screw conveyors, bucket elevators, pneumatic conveyors and other conveyors of special design and combinations of conveyors, monorails, bridge cranes, gantry cranes, wharf cranes, industrial locomotive type cranes on various types of mountings, bulldozers, scrapers, concrete mixers, chain-hoists, electric hoists, electric magnets, chain and wire cable slings, freight elevators, highway trucks and tractor trailers, and many others too numerous to mention.

It will be seen from this partial list, that there is hardly an industry that isn't using some form of materials handling equipment. Yet the market for more of this equipment is available, and many instal-

lations can be made which will quickly pay for themselves.

If we can get more materials handling equipment installations in industry, we will find that these new methods of shipment, the better and quicker handling of supplies, etc., will have a direct effect on promoting the sale of consumer goods, will reduce overall costs, and will have a specific bearing on distribution costs.

In addition, the manufacturers of this equipment will be able to expand their own industry, thereby making it possible for the men who have been elevated from the common labor class to the skilled and semi-skilled labor class, to find employment more suitable to their training, and with higher earning possibilities.

Here we have a \$100,000,000 industry which not only promotes the employers' interests, but also promotes the consumers' interests by reducing ultimate costs.



The Nutting Trucker Says:

"I'll see that you get just the kind of trucks you need for your job—and you'll call it your lucky day when you see how these easy rolling NUTTINGS get the work out." Look in your classified phone directory for your local Nutting representative. If not listed, write to us for Bulletin 41-G.

Fig. 138
Dolly



A heavy hardwood frame dolly for boxes, crates, etc. Double ball race swivel casters with metal or rubber tired wheels. Nutting makes all types of wood or steel dollies with capacities up to 4000 lbs.



Fig. 419 Jack
Fig. 421 Live Skid

Provides low-cost storage for merchandise that must be quickly moved at any time. Many advantages—compare before you buy.

NUTTING TRUCK & CASTER CO.

1166 DIVISION STREET, WEST, FARIBAULT, MINNESOTA

Fig. 16-24
Western Pattern Truck with heavy axle, rugged hardwood frame and steam bent handles. Two center straps.

FLOOR TRUCK LEADERSHIP SINCE 1891



**MAKES
EVERY
INCH OF STORAGE
SPACE HANDY...**



**IT'S THE
HANDIBELT**
in Action

Hard-to-get-at spaces are easily reached with the Handibelt—the all-purpose incline, decline or horizontal portable belt conveyor. Design allows the carrier belt to be horizontal at any height from 18 inches to 42 inches. Can be used as a piler elevating from 10 inches to 6 feet 3 inches or from 30 inches to 7 feet 6 inches, or any angle or degree between those extremes. Either end may be raised or lowered. Handles boxes, cartons, crates, bags, and other packages up to 100 lbs. Rubber covered belt is free of side rails—accommodates commodities wider than 14 in.

Weighs less than 500 lbs.—easily wheeled about by one person. Equipped with 1/3 hp. motor—plug it into any ordinary lighting circuit.

Get complete information today—write for Handibelt Bulletin No. DA-16.

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul 9, Minn.
Sales and Service in Principal Cities

STANDARD
Conveyors and Power
CONVEYORS

Logistics . . .

(Continued from page 37)

proved themselves effective and economical distribution agencies. In other words, our logistics must improve.

This improvement is possible. Like the army and navy, we have men in industry who knew the problems. They are traffic managers. These men know how to use the "tools" at their command to effect distribution economies. Unfortunately, however, the traffic manager has only begun to occupy the position which the importance of his work requires. Many of the large producers of the country do have traffic departments and traffic managers on their staffs. Some of these producers depend upon the traffic manager to perform the functions for which his department is designed. But all too often, the traffic manager is not used to proper advantage. It is time for

management to act in this matter.

Distribution and production together include a vast complex of activities in which businessmen engage in an effort to make and sell goods at a profit. Both production and distribution are essential and often overlapping aspects of a single comprehensive process, that of supplying the consumer with the kind, quality and quantity of goods he wants, delivered at the time and place he desires and at a price he is willing to pay.

Economists have made the distinction that production is the addition of physical or form utilities to goods whereas distribution is the addition of time and place utilities. Distribution thus includes the transportation of finished products from the point of manufacture to the place of sale, oftentimes warehousing services until needed, and finally the merchandising, display and advertising of goods and their actual sale or transfer into the possession of the ultimate buyer.



**NEW
LIFTING
EQUIPMENT**
Speeds
Tough Jobs

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It may be safely presumed that criticism of the cost of distribution

will grow sharper when jobs and incomes begin to decline to normal levels. Actually, the ability of individual production firms to endure the new competition may depend largely upon their ability to operate their distribution programs more effectively. In the past, it was the manufacturer who produced most efficiently who prospered. In this new age, with fabricating processes almost standardized, it may well be that only the manufacturer who distributes most efficiently will succeed.

Because of this, the industrial traffic manager, as the official of the producer most directly concerned with the cost of distribution, deserves a place of greater importance in the executive structure of his company. It is he who must be constantly on the alert for new and improved methods of distribution and for opportunities to reduce the costs thereof. It is here that the traffic manager and public merchandise warehouses can join hands.

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New Packing Techniques

(Continued from page 43)

or five widths and gauges needed by the average shipping room, it was surprisingly difficult to educate packers to select the proper size for weight and stress of the container, place it correctly on the container, and take the precaution of stapling the strapping. For the benefit of any shipper not sold on the advantages of strapping, it is suggested that a standard container be sent to a packaging laboratory both strapped and unstrapped for a comparative test. Do not be surprised if the strapped container withstands two and three times the abuse of the non-strapped unit.

Another legacy from the war period is the tendency to supplant heavier shipping boxes with cleated plywood or cleated fibre-board containers. Builders of large shipping crates had to relearn accepted engineering principles in order to combat the increased stresses and strains of global transportation. Additional struts, diagonals and other reinforcements were added to the interior core of large cargo carriers.

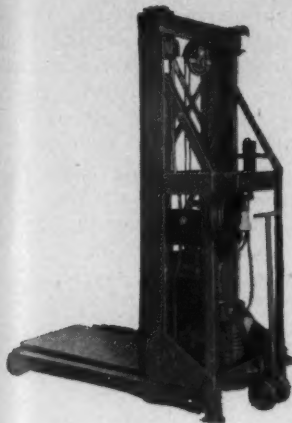
New procedures in container design: plywood. Use of plywood for shipping containers, even for sheathing of large size crates, has grown during the war period by leaps and bounds. Any shippers still suspicious of the cost of plywood, or of its tendency to separate under moist conditions, will discover two surprises when it is available again. Plywood is made today with assurance that the plies will not separate, and its cost will be considerably less than for the prewar product. What does the shipper gain by using a plywood container? First, it makes the unit more nearly waterproof. It offers far greater strength because of crossing of the wood grain in the several plies. It is lighter in weight. It takes less time to assemble. It has better appearance, and usually offers a better dressed surface for markings. It offers greater

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rigidity with less likelihood of warping or weaving, as the one-piece panel furnishes its own resistance to a diagonal stress.

Paperboard. Moisture-resisting corrugated paperboard and moisture-impervious fibreboards, such as V-board, replaced most old style paperboard containers for many products supplied under war contracts. The coming year undoubtedly will see the release of more war-developed paperboards to the general market. Undoubtedly, the old style paperboard box will answer many specific needs, but distributors cannot afford to be wedded to any one type. Studies should be made of the costs and advantages of the newly developed fibreboards. The greater security, protection and waterproofness of V-board, for example, may more than offset difference in cost over conventional corrugated.

Tekwood. Another recent contribution to container construction is a lamination of one-ply veneer with heavy craft paper, forming a siding material with particular advantage where sturdiness is required along with minimum weight and bulk. It is extremely versatile as it can be bent, die-cut, embossed, nailed, painted or stenciled with less difficulty than straight plywood.

Reusable containers. The war brought about widespread use of low-cost, prefabricated reusable containers in light, sturdy materials, sometimes with recessed handles for ease in lifting. These ranged from small tool kit size to the equivalent of a large locker trunk. The Army Air Forces developed a set of four such containers, nested, which were a boon to fast-moving air bases. An indication of the need for reusable shipping containers in the post-war period is indicated by the number of inquiries as to where they may be secured, which have been put to me by former army air men now in business.

Reusable shipping containers will undoubtedly become increasingly popular in the future. A reusable shipping box is one which, by use of hinge and hasp, other hardware, or by simple lock-nut arrangement, affords, complete

closure, yet permits lid or one side to be opened without breaking a permanent nailing pattern. The advantages are many. Dealers remove goods for display with minimum difficulty, hold empty containers pending sale, repack with factory security, and forward to the purchaser. The ultimate receiver is grateful for a box which is simple to open. Inevitably, he would retain the container for utility storage. Such features make for one more plus in priceless word-of-mouth advertising, to say nothing of the permanent billboards which would be around if the manufacturer's trademark were on the outside. In exchange dealings, where used merchandise is to be returned for new, the dealer, garage or plant finds it simple to reuse the two-way container for prompt return of trade-in item.

Lock-tight metal containers. The war has given to distribution a new type of metal drum or pail with self locking covers for the packing of precision parts, instruments and items of highly

machined surfaces requiring a Method II, or hermetically sealed shipping unit. Not only will this handy container prevent corrosion of costly parts in export, but wherever parts in storage are affected by humidity or other conditions, it can be employed to advantage.

Parachute drops and free falls. Containers designed to protect merchandise discharged from planes in flight, perfected under war conditions, will play an ever increasing role in distribution. There is now a wide assortment of such equipment, and considerable research is being made currently on the subject. The coming period may see a certain portion of the growing volume of air cargo going to non-scheduled, charter flight lines. Central plants of large industries may arrange for daily "kick-off" parcels of urgently needed parts and supplies to hundreds of branches and dealers at a fraction of the cost of air freight to the nearest airport and trucking to destination.



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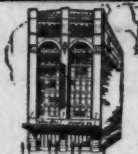
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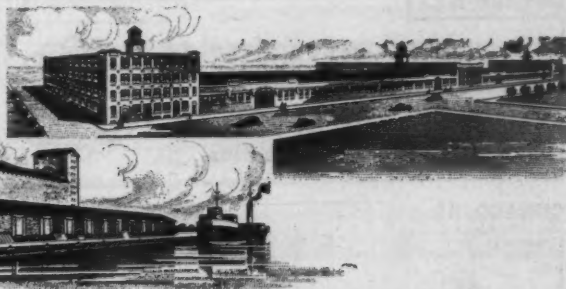
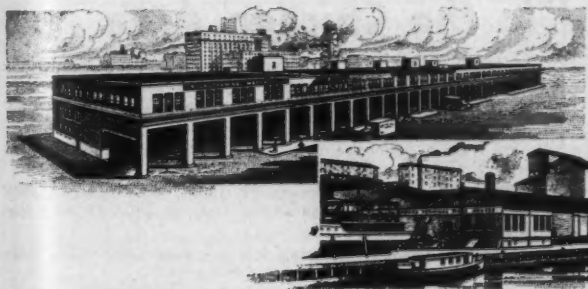
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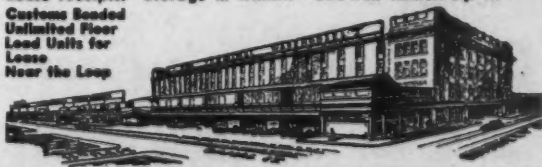
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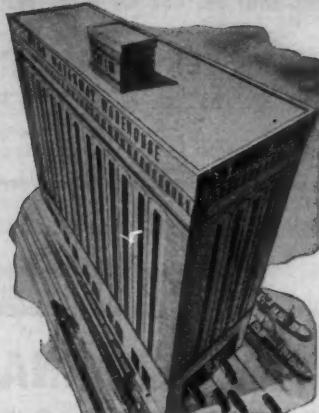
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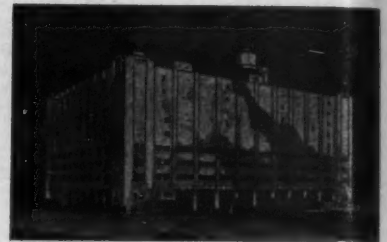


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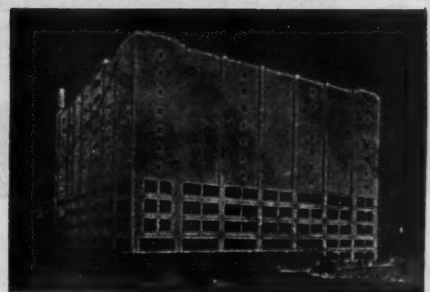
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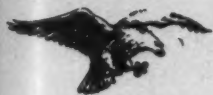
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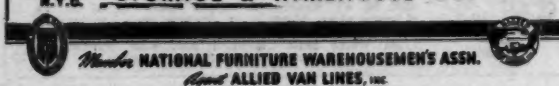
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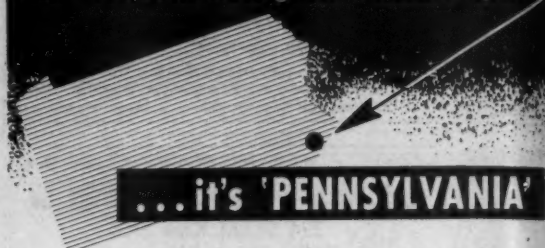


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PRR SIDING
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1917-19 Brownsville Road
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Storage, Packing and Shipping
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Agent of Allied Van Lines, Inc.

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Freeze space.

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Automatic Sprinklers—Low Insurance Rates
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Terminal Warehouse Company of R. I., Inc.

336 ALLENS AVE., PROVIDENCE 1
Storage all kinds of General Merchandise, Pool Car
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Frackage facilities 50 cars. Dockage facilities on
deep water.
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Merchandise and Household Goods STORAGE and DISTRIBUTION

Modern Concrete Warehouse, 100,000 Square Feet of Storage Space.
Private Tracks Connecting with All Railroad and Steamship Lines.
Motor Truck Service. Low Insurance Rates.

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Est. 1928 *MEMBER*

General merchandise and household goods storage.

Pool Car Distribution. Private rail sidings.
Sprinkler equipped warehouse.

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80,000 Sq. Ft. Floorspace
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Fireproof, sprinklered building with private siding on the C&NW.
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135,000 square feet on Southern Railway tracks
Equipped with Automatic Sprinkler

Insurance at 1 lb. per \$100.00 Household goods shipments
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"Good housekeeping, accurate records, Personal Service"
Located in the center of the Jobbing & Wholesale District

*Sprinklered Low Insurance
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**Merchandise Storage & Pool Car Distribution
Local Delivery Service**

A.B.T. Burger and Sprinkler Supervisory Service. Illinois Central, Frisco & Mo. Pac. Private rail siding 9 car spot.

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Merchandise storage, dependable service, free switching. Local cartage delivery, Illinois Central and Cotton Belt Railway tracks. Automatic sprinkler. A.D.T. warehouse.

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Storage (Mdes.)—Pool Car Distribution—Local delivery service—Office Space.
In the heart of the wholesale district and convenient to Rail, Truck and express terminals. Eight car railroad siding—(N.O.&S.T. & L.&N.)—Railroad switching. Represented by Distribution Service, Inc. Member of A.W.A. and N.W.A.

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Automatic Sprinkler System—Centrally Located

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STORAGE
Automatic Sprinklered—Spot Stock and Pool Car Distribution—Private Siding

What is the relationship of distribution to employment? Read William E. Hill's answer on page 31.

and Firms are Arranged Alphabetically

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103 SOUTH PIERCE STREET

Merchandise Storage & Distribution
Household Goods Storage, Moving & Packing
Long Distance Operators

WM. C. BOYCE

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Merchandise and Household Goods
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30,000 Sq. Ft. Distribution of Pool Cars
Transfer Household Goods

Agent for A.V.L. Member of N.F.W.A.—S.W.A.T.A.

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MERCHANDISE - STORAGE
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EVERY ACCOUNT IS
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BY THE MANAGEMENT



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Over 10,000,000 Pounds of Freight Handled Monthly
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Storage and distribution of all commodities.

Pool car service a specialty.

Bonded warehouse. Personal service.

Central Distribution Point of the Southwest

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Lowest Content Insurance Rate
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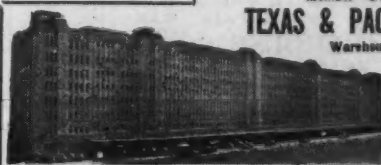
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LOW INSURANCE RATES



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6 BONDED WAREHOUSES
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Sprinklered—A.D.T. Watchmen
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Operators—Houston Division
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Established 1901
Forty-four Years
Under Same Continuous Management
MERCHANDISE EXCLUSIVELY
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A.D.T. Supervised Service

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Warehouses Sprinklered Throughout
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SERVICE THAT COUNTS

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MEMBER
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Fireproof Sprinklered
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50,000 SQUARE FEET PRIVATE RAIL SIDING

Lowest Insurance Rate in Norfolk. Pool Car Distribution

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OPEN YARD STORAGE AVAILABLE
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60 Years of Uninterrupted and Expert Service

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HOUSEHOLD
GOODS

THE W. FRED. RICHARDSON Security Storage Corporation

OBJECTS OF ART
FURS - RUGS
VALUABLES

Main at Belvidere, Richmond 20
PACKING FOR SHIPMENT
Local and Long Distance Movements
ESTABLISHED 1897 Agent for Allied Van Lines, Inc.

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Established 1908

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160,000 SQ. FT.
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INSURANCE
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25¢ PER \$100
PER YEAR



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Finance and Storage

Pool Car Distributors

General Merchandise Storage

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ROANOKE 7, VIRGINIA



ROANOKE, VA.

ROANOKE PUBLIC WAREHOUSE

349 W. Salem Ave., W., Roanoke 8

Capacity 500 Cars

Private Railroad Siding



Automatic Sprinkler

Accurate Accounting

We make a Specialty of Storage and Pool Car Distribution
for Agents, Brokers and General Merchandise Houses.
Member of American Chain of Warehouses

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A Seattle Institution—57 years of outstanding service
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Cartage — Distribution — Storage
Highest financial rating; new fireproof, A.D.T. sprinklered
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"The Shippers' Open Door to Alaska and the Orient"

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Cold Storage — Dry Storage — Rentals — Pool Car Distribution — Office Rentals
Fireproof, brick const.; Sprinkler system; Insurance rate: 12.5¢. Siding connects
with all rail lines.

Bonded U. S. Customs: State License No. 2
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THE INLAND EMPIRE'S LARGEST DISTRIBUTORS

MEMBERS: AWA-ACW-WSWA

To insure success in business, distribution
logistics must improve, declares J. Leo Cooke
in an article on page 37.

TACOMA 2, WASHINGTON



AMERICAN WAREHOUSEMEN'S ASSOCIATION

**PACIFIC STORAGE WAREHOUSE
& DISTRIBUTING CO.**

Tacoma 2

A Complete Merchandise Warehouse Service
DRAYAGE — STORAGE — DISTRIBUTION

TACOMA'S Merchandise Warehouse and
Pool Car Distributors

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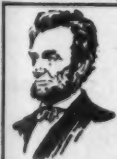
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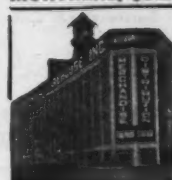
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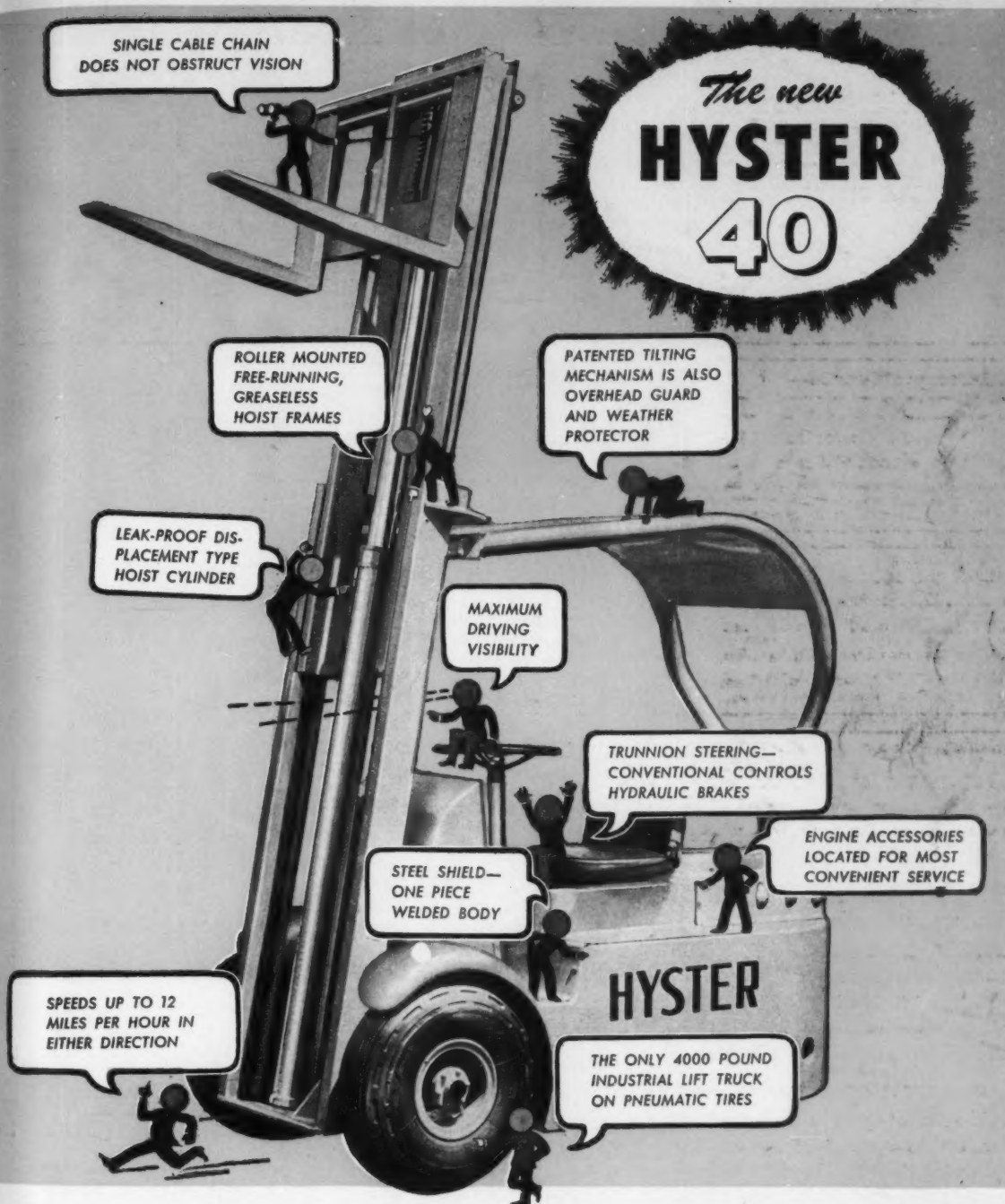


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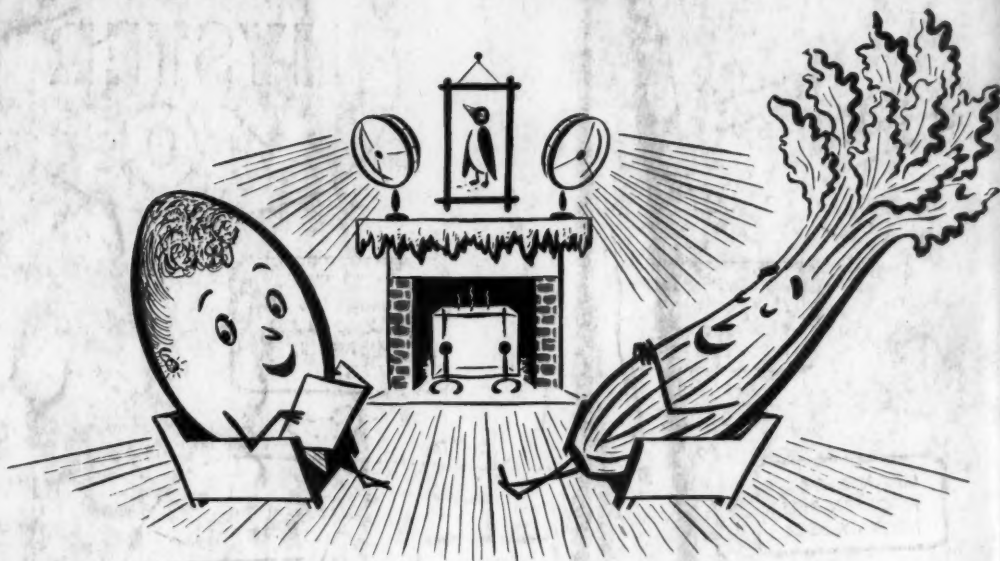
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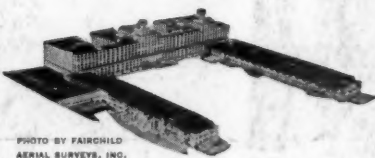


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